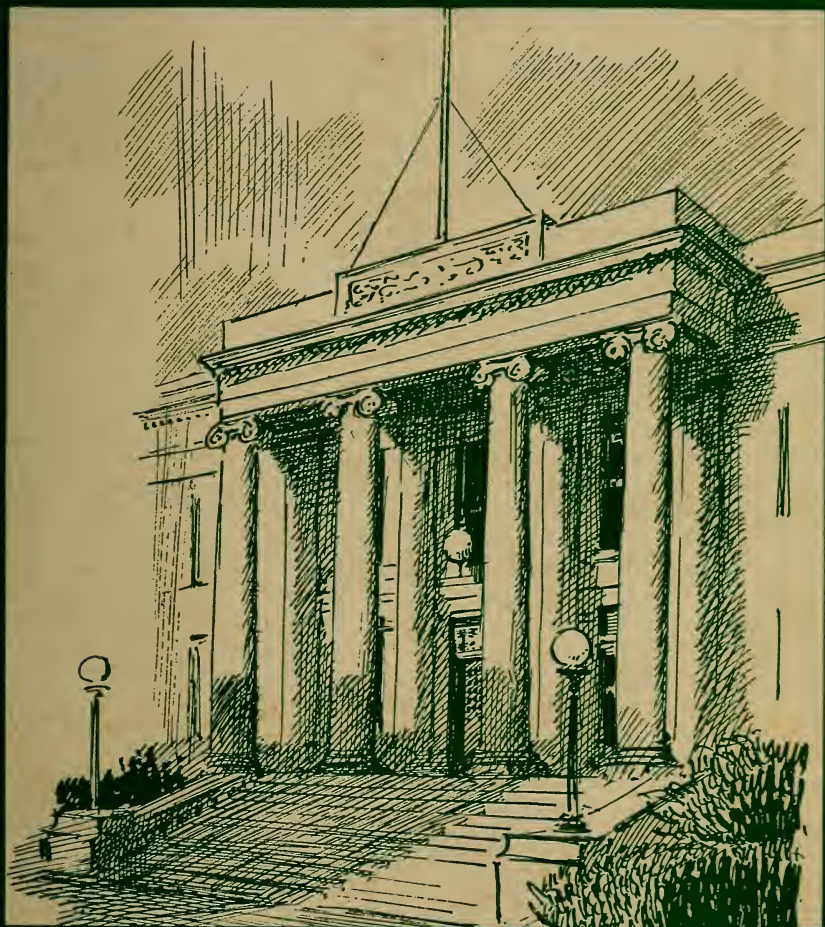


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COURSES OF INSTRUCTION FOR THE YEAR 1951-52

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THE HARVARD SCHOOL OF PUBLIC HEALTH

COURSES OF INSTRUCTION

1951-52



*55 Shattuck Street
Boston, Massachusetts*

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CONTENTS

ADMINISTRATIVE OFFICERS	5
FACULTY OF PUBLIC HEALTH	6
TEACHING STAFF	9
ADMINISTRATIVE BOARD	12
COMMITTEES OF THE FACULTY	13
VISITING COMMITTEE OF THE BOARD OF OVERSEERS	14
INTRODUCTION	17
FACILITIES	19
COURSES OF STUDY AND DEGREES	22
Master of Public Health	22
Doctor of Public Health	23
Master of Science in Hygiene	24
Doctor of Science in Hygiene	25
Master of Industrial Health	27
Program of Study in Public Health Education	28
Master or Doctor of Science in Engineering	30
CONTENT OF THE COURSES	31
Interdepartmental Courses	31
Biostatistics	33
Epidemiology	36
Industrial Hygiene	39
Maternal and Child Health	43
Microbiology	48
Nutrition	52
Physiology	55

CONTENTS

Public Health Practice	57
Sanitary Engineering	66
Tropical Public Health	68
GENERAL INFORMATION	71
Registration	71
Veterans	71
Housing	71
Fees and Expenses	72
Bond Requirement	74
Student Health Service	74
Fellowships and Scholarships	75
STUDENTS 1950-51	77
DEGREES CONFERRED IN 1951	80
SCHEDULE OF COURSES OFFERED IN 1951-52	85
CALENDAR FOR THE ACADEMIC YEAR 1951-52	<i>Inside Back Cover</i>

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* Dr. Ipsen is Superintendent of the Institute of Laboratories of the Massachusetts Department of Public Health. He is not assigned to any department.

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1951-52

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INTRODUCTION

This general introductory statement by the Faculty of the Harvard School of Public Health is intended for the men and women who wish to enter the new profession of public health. Its purpose is to define "public health" and to describe briefly the origin, scope, and objectives of the Harvard School of Public Health. The curriculum is presented in detail in a later section; this introduction gives a general outline of the opportunities for students who have backgrounds in one or more of the various disciplines which form the foundation of public health.

Public health is concerned with maintaining and improving the physical and mental health of the population. It deals with groups of people, communities, or entire populations. In this emphasis on the community as a whole, public health differs from preventive medicine which deals more with the individual. Throughout history the need for preventive medicine has been recognized by physicians and laymen alike. When knowledge in the basic sciences finally became available in the past century, rapid progress was made in the direction of maintaining and improving the health of individuals. The first step to meet the need for instruction of medical students in this new field came in 1909 when a separate department of preventive medicine was established in the Harvard Medical School. More recently the concepts of preventive medicine for the individual have been extended and broadened into the new profession of public health. In 1913 Harvard University, acting jointly with the Massachusetts Institute of Technology, established the first American school for health officers, from which, in 1922, Harvard developed its present School of Public Health.

The main objective of the teaching program of the Harvard School of Public Health is to train and develop the leaders who are needed to plan, organize, and operate public health programs for official and private health agencies, for industries, for the Armed Forces, and for governmental units—local, state, and national. Furthermore, the

School instructs various specialists who participate in the operation of health programs, including epidemiologists, microbiologists, biostatisticians, nutritionists, industrial hygienists, and environmental physiologists. Many of its graduates become administrators of important activities in industrial health, maternal and child health, mental health, medical care, control of cancer, tuberculosis, venereal diseases, and tropical diseases. Other graduates become teachers and research workers in this and other schools of public health and in departments of preventive medicine in medical schools.

The major part of the curriculum is devoted to the courses leading to the degree of Master of Public Health which is intended primarily for graduates in medicine, dentistry, veterinary medicine, or allied professions. The courses are also open to students who have satisfactory preparation in the basic medical sciences and who have developed an understanding of community problems by working in a public health field. The work requires one academic year of study, during which the students acquire a clear understanding of the fundamental principles of public health sciences and an appreciation of their application in special fields of work. It also provides an opportunity for concentrated study in one of these special fields with a corresponding mastery of its technics.

For students who do not have an extensive foundation in the basic medical sciences and who have not had experience in public health but are interested in developing competence in some specialty of public health, programs of study are available leading to the degree of Master of Science in Hygiene. This provides an opportunity for intensive training in some specific field of public health. Each individual program is designed to fit the student's previous background and his need for further development. An effort is made to emphasize the relation of the student's specialty to public health as a whole.

Physicians who are interested primarily in those aspects of public health which are of particular concern to industries may register at the School for a one year program which leads to the degree of Master of Industrial Health. This program includes instruction in basic public health sciences but allows time for concentration in sub-

jects of more immediate interest to the physician who is engaged in industrial medicine and health and who must understand the principles of personnel management and of industrial health hazards as well as the clinical aspects of his work.

The programs which lead to the degrees of Doctor of Public Health and of Doctor of Science in Hygiene are based on individual research and the preparation of a thesis embodying an original contribution to knowledge. Candidates for these degrees must have completed the work required for the corresponding master's degrees and must have demonstrated a high degree of competence, scientific ability and imagination.

Subject to limitations of space, the School is prepared to accept a small number of qualified students who are not candidates for degrees, but who are interested in following special programs of various kinds. For example, industrial physicians may arrange a concentrated program of post graduate training in industrial health during the eight weeks of the third period of the year.

The Harvard School of Public Health is a center of post graduate education, research, and community service in public health. Its graduates are active in important public health positions over the world. Its research program extends from the basic laboratory sciences to the surrounding communities. Its faculty contributes to the activities of many voluntary, governmental, industrial and military health agencies.

FACILITIES

Most departments of the School of Public Health are housed in two buildings in the same block: one at 55 Shattuck Street, the other at 695 Huntington Avenue, Boston (15). The administrative offices are in the former building. Between the School's two buildings are the Harvard Medical and Dental Schools; the Children's Medical Center is next door, the Peter Bent Brigham Hospital is across the street and the Lying-in Hospital and Vanderbilt Hall are a block away. The latter is a dormitory for medical students, where

students of the School of Public Health may make arrangements to eat.

The facilities of the hospitals and of the Harvard Medical School are available to qualified students of this School, and are used in connection with the teaching of various subjects. In addition, students enrolled at the School may take courses in other departments of Harvard University. Students frequently enroll for work in the fields of sociology, public administration, business administration and medical sciences. Certain graduate courses at the Massachusetts Institute of Technology are also open to students of this School.

The Department of Sanitary Engineering of the School is also part of the Division of Engineering of the Graduate School. The basic course for students of the School of Public Health is taught here, but students may also register for certain special and advanced courses in Sanitary Engineering given in Cambridge.

Of particular interest to students of this School is the close contact with various health agencies in Massachusetts and elsewhere. The divisions of the Massachusetts Department of Public Health not only furnish opportunities for observation and training in their fields, but their staffs enter into the teaching of courses at the School. Administrative methods at local levels may be studied at first hand in the health departments of the Cities of Newton and Cambridge and the Town of Brookline, the directors of which are also faculty members and take active part in course teaching.

There are two special areas for study and training purposes closely linked to the School. The Whittier Street Health Center, a district health unit of the Boston City Health Department, is being developed with the aid of a grant from the Commonwealth Fund and will be used not only for purposes of demonstration and training but also as a field for research in problems of administration, of sociology and of human ecology in general. The other special area includes the territory covered by the Nashoba Associated Boards of Health and the urban community of Leominster, some 30 miles from the School. It furnishes opportunities for the investigation of

rural problems and administrative methods, supplementing those offered by Whittier Street.

The Institute of Laboratories of the Massachusetts Department of Public Health is engaged in a program of general interest, attracting visitors and students from various parts of the United States and from foreign countries. It not only performs a wide variety of standard bacteriological, immunological and chemical procedures, but is actively engaged in several research programs. Its Superintendent is a member of the School's faculty. This close contact with one of the country's outstanding laboratories provides unsurpassed opportunities for qualified students who wish to obtain intensive experience in many types of laboratory methods of particular pertinence to public health.

In general, the location of the Harvard School of Public Health places it in one of the great medical and industrial centers of this country. Clinical subjects, medical care and hospital administration may be studied at first hand. The many large and small industrial organizations permit the observation and investigation of a wide range of problems of industrial hygiene.

Libraries

The joint Library of the School of Public Health and the Harvard Medical School is on the second floor of the Administration Building of the Medical School. It is open from 9 a.m. until 10 p.m. on week days, from 9 a.m. until 5 p.m. on Saturdays, and from 2 p.m. until 6 p.m. on Sundays. There are at present 98,500 volumes, 205,400 pamphlets, and 712 current periodicals on file in this library.

Students also have the privilege of using the College Library in Cambridge, as well as the various departmental libraries belonging to the University, in all of which there are over 4,000,000 volumes and pamphlets.

The Boston Public Library is open to students who are residents of Boston, and to students not residents of Boston who have filed a bond at the Bursar's office.

The Boston Medical Library, No. 8 The Fenway, contains about

207,000 bound volumes, 147,000 pamphlets, and 687 current periodicals on file. For those who desire to consult medical literature, this very valuable library is open on week days from 9 a.m. to 5 p.m., Saturdays 9 a.m. to 1 p.m., and on Mondays and Thursdays until 9 p.m., from the middle of October to the end of May.

COURSES OF STUDY AND DEGREES

MASTER OF PUBLIC HEALTH

Requirements for Admission

Students may apply for admission as candidates for the Master of Public Health degree if they are

- (1) graduates of approved schools of medicine, dental medicine, or veterinary medicine, or
- (2) graduates in arts or sciences with adequate training in the basic medical sciences * who
 - a. have completed at least one academic year of acceptable graduate study in a public health field, and who
 - b. have had a period of acceptable experience in a responsible position in public health practice.

In exceptional cases the Administrative Board may admit applicants in the second category who lack *a* or *b*.

Requirements for the Degree

One academic year must be spent in residence at the University. The student must complete satisfactorily the required and elective courses to a total of 40 credit units. The general course entitled "An Introduction to Public Health" and the basic courses in Biostatistics, Epidemiology, Public Health Practice, and Sanitary Engineering are required of all students unless they can demonstrate equivalent preparation. The schedule of courses is shown on pages 86 to 93.

By the end of the first period each student selects a field of special

* See statement on page 49 regarding requirements in bacteriology.

interest in which approximately one third of the year's work is to be taken. A faculty advisor assists each student in planning his program which is reviewed by the Committee on Degrees.

At the end of the academic year the student is required to take a comprehensive examination in which he must demonstrate satisfactorily his ability to coordinate not only the basic subjects, but also various specialties in the field of public health.

DOCTOR OF PUBLIC HEALTH

For the degree of Doctor of Public Health the student must complete an approved program of independent and original investigation in a special field and must present the results of this research in an acceptable thesis.

Requirements for Admission

1. An applicant for admission to candidacy for this degree must be either (a) a graduate of an approved school of medicine, dental medicine or veterinary medicine, or (b) the holder of another doctoral degree in one of the basic sciences related to public health. In exceptional cases, an individual lacking a previous doctoral degree may be admitted if he has displayed outstanding ability in previous academic work and in practical public health experience.

2. The applicant must hold the degree of Master of Public Health or its equivalent from a recognized institution and must indicate ability to undertake original investigation in a special field.

Requirements for the Degree

1. A minimum of one year of resident research is required following admission to candidacy. In exceptional cases the required work for the degree may be completed in this year, although generally, preparation of an acceptable thesis will require a longer period.

2. After the applicant enters the School, a special committee is appointed to review his preparation in the chosen and related fields

of study, to pass upon the plan of the proposed thesis, and to determine when the candidate is eligible to take the qualifying examination. This examination is oral, covers the basic public health sciences, and must be passed before the candidate is permitted to proceed with the thesis.

3. The candidate must possess a reading knowledge of at least one language, other than English, in which there exists a significant body of literature relevant to the candidate's field of study. The ability to read this language must be demonstrated before the candidate is permitted to take the qualifying examination.

4. The special committee appointed to study the applicant's eligibility continues to supervise his work. After completion of the thesis an *ad hoc* reading committee is appointed. It consists of the chairman of the student's special committee and two members of any faculty of the University who are not members of the special committee. The reading committee reports to the Committee on Degrees on the acceptability of the thesis. Ordinarily the thesis must be submitted within five years of admission to candidacy.

5. Three bound copies of the thesis must be deposited in the Dean's office at least four weeks before the date on which the degree is to be conferred. Each copy must be accompanied by a summary not exceeding 1200 words in length, which shall indicate clearly the purposes, methods, and results of the investigation.

6. If the thesis is accepted, the Chairman of the Committee on Degrees conducts an oral examination before the Faculty on the thesis and on those public health subjects to which the thesis is related.

MASTER OF SCIENCE IN HYGIENE

(With Designation of the Field of Concentration)

This degree is granted on fulfillment of a program of advanced work in one of the basic disciplines of public health. The courses taken must form an integrated plan of study in one branch of knowledge and allied subjects.

Requirements for Admission

An applicant for this degree must have received an academic degree from an institution of recognized standing, and must be prepared to do work at a graduate level in his field of concentration.

Requirements for the Degree

1. Two academic years of graduate work must be completed, one of which must have been spent in residence. A student with an exceptional record of accomplishment may be able to complete the requirements in less than two academic years. Decision on this point may be made by the Administrative Board at any time after the student completes one semester of residence, upon the recommendations of the Committee on Degrees and the department in which the student has his major interest.

2. The student must complete a program including the general course entitled "An Introduction to Public Health" as well as the basic courses in Biostatistics and Epidemiology, unless he can demonstrate equivalent preparation. Elective courses must be approved by the Committee on Degrees on the recommendation of the head of the department in which the student wishes to concentrate. All courses in the primary and related fields of interest must be passed with an honor grade. In addition, the student must pass with an honor grade a comprehensive examination in his principal and related fields of study.

DOCTOR OF SCIENCE IN HYGIENE

(With Designation of the Field of Concentration)

This degree is granted on successful completion of a program of independent and original research in one of the basic disciplines of public health.

Requirements for Admission

Candidates for the degree of Doctor of Science in Hygiene must have completed work equivalent to that required for the degree

of Master of Science in Hygiene and must indicate ability to undertake original investigation in a special field.

Requirements for the Degree

1. A minimum of one year of resident research is required following admission to candidacy. In exceptional cases the required work for the degree may be completed in this year, although generally, preparation of an acceptable thesis will require a longer period.

2. After the applicant enters the School, a special committee is appointed to review his preparation in the chosen and related fields of study, to recommend a program of study, to pass upon the plan of the proposed thesis, and to determine when the candidate is eligible to take the qualifying examination. This examination is oral, covers the chosen and related fields of study, as well as the course work represented by the Master of Science in Hygiene degree, and must be passed before the candidate is permitted to proceed with the thesis. Ordinarily the qualifying examination is given approximately one calendar year before the applicant expects to receive the degree.

3. The candidate must possess a reading knowledge of at least two languages, other than English, in which there exists a significant body of literature relevant to the candidate's field of study. The ability to read these languages must be demonstrated before the candidate is permitted to take the qualifying examination.

4. The special committee appointed to study the applicant's eligibility continues to supervise his work. After completion of the thesis, an *ad hoc* reading committee is appointed. It consists of the chairman of the student's special committee and two members of any faculty of the University who are not members of the special committee. The reading committee reports to the Committee on Degrees on the acceptability of the thesis. Ordinarily the thesis must be submitted within five years of admission to candidacy.

5. Three bound copies of the thesis must be deposited in the Dean's office at least four weeks before the date on which the degree

is to be conferred. Each copy must be accompanied by a summary not exceeding 1200 words in length, which shall indicate clearly the purposes, methods, and results of the investigation.

6. If the thesis is accepted, the Chairman of the Committee on Degrees conducts an oral examination before the Faculty; the examination covers the fields of investigation included in the thesis.

MASTER OF INDUSTRIAL HEALTH

The course of training leading to the degree of Master of Industrial Health is designed to meet the increasing need for physicians qualified to plan, organize, and direct health programs for industry and labor.

Requirements for Admission

Candidates for this degree must be graduates of an acceptable school of medicine. Students from the United States should have completed an internship of at least twelve months in a hospital approved by the American Medical Association. While preference will be given to physicians who have had previous experience in industrial practice, the course is open to all qualified physicians.

Requirements for the Degree

1. One academic year, consisting of four eight-week periods, must be spent in residence at the University.
2. The student must complete 40 credit units satisfactorily. All candidates for the degree will be expected to take the following courses unless they can demonstrate equivalent preparation:

Industrial Medicine

- Basic Problems in Industrial Hygiene
- Industrial Medicine
- Industrial Medical Clinics
- Personnel Administration
- Human Problems of Adjustment in Industry

Environmental Hygiene

Environmental Physiology
Principles of Sanitation
Industrial Air Analysis
Hygienic Aspects of Ventilation

Public Health

An Introduction to Public Health
Principles of Epidemiology
Principles of Biostatistics
Organization of Medical Care

In addition, the student may select from the general curriculum, courses of interest to him, or do special work subject to approval of the Head of the Department of Industrial Hygiene.

3. At the end of the academic year, a comprehensive examination will be given. This may be oral or written and will be designed to test the knowledge and judgment of the student and his ability to coordinate the basic industrial health subjects.

PROGRAM OF STUDY IN PUBLIC HEALTH EDUCATION

This program is offered by the School of Public Health with the cooperation of the Department of Social Relations (Faculty of Arts and Sciences) and the School of Education. The program as outlined is flexible and may be modified to suit the needs of the student. Classwork is supplemented by three months of supervised field work, which is required for students without experience in health education.

Candidates may study for the degree of Master of Public Health or Master of Science in Hygiene, depending upon the qualifications of the individual applicant. Work toward the degree of Doctor of Science in Hygiene is offered to exceptional students.

Health education is an area of public health in which there has been rapid development in recent years. Professional opportunities

are numerous and varied and exist at local, state and national levels in both official and voluntary agencies.

The program of study includes the following courses:

Public Health and Health Education

(School of Public Health)

<i>Required Courses:</i>	<i>Credits</i>
An Introduction to Public Health	3
Principles of Public Health Practice	2
Public Health Administration	6
General (2)	
Health Education (2)	
Public Health Nursing (1)	
Social Work in Health Agencies (1)	
Principles of Biostatistics	4
Principles of Epidemiology	2.5
Principles of Sanitation	4
Public Health Nutrition	1.5
Maternal and Child Health — Problems and Services	2
Psychosocial Problems	1
Workshop in Health Education	3
School Health Education	1
TOTAL	30

Electives:

Courses in medical care; mental health; public health history; control of cancer, tuberculosis, venereal diseases, and others may be elected depending on individual interests and training.

Social Relations and Education

(Faculty of Arts and Sciences; School of Education)

A selection of courses from the following, which presuppose some knowledge of psychology and education, will vary with the student's background in education and the social sciences.

Social Relations

<i>Course</i>	<i>Credits</i>
Dynamic Psychology (S.R. 118)	5
Opinion and Communication (S.R. 152)	5
Psychology of learning (Psy. 141)	5
Psychology of motivation (Psy. 145)	5
Social Anthropology (S.R. 115)	5
Social Psychology (S.R. 117)	5
A System of Sociology (S.R. 112)	5
Sociological Problems	5
Introduction to Group Dynamics	5

Education

<i>Course</i>	<i>Credits</i>
Educational Administration (Ed. 15 or 16)	5
Educational Psychology (Ed. 1)	5
Guidance: Principles and Practice (Ed. 1 or 16)	5
Learning and Teaching (Ed. 15)	6
Principles of Teaching (Ed. 3)	5

Field Work

Arrangements will be made with approved official and voluntary agencies for three months of supervised field work in health education.

MASTER OR DOCTOR OF SCIENCE IN ENGINEERING

Graduates of engineering colleges or scientific schools of recognized standing who are interested in the sanitary engineering or industrial hygiene aspects of public health may be admitted to the Department of Engineering of the Graduate School of Arts and Sciences as candidates for the degree of Master or Doctor of Science. They may elect any of the courses offered in the School of Public Health.

For further information write to the Committee on Admissions, Graduate School of Arts and Sciences, Farlow House, Cambridge 38, Massachusetts.

CONTENT OF THE COURSES OFFERED BY THE FACULTY OF PUBLIC HEALTH

INTERDEPARTMENTAL COURSES

In addition to the instruction afforded in the various disciplines represented by the different departments of the School, it is believed to be important to bring the entire faculty and student body together at frequent intervals to consider broad subjects of basic importance to the entire group. With this in mind, the School has provided the following interdepartmental courses.

Public Health Forums. The Evolution, Scope, and Objectives of Public Health

Lectures and seminars. *Dates to be announced.* DEAN SIMMONS, members of the Faculty, and guest lecturers.

In order to afford an opportunity for the entire student body to meet with the Faculty and distinguished guest lecturers, forums are held at appropriate times during the academic year. The evolution, scope, and objectives of the profession of public health are the principal consideration of the forums.

The modern practice of public health requires coordinated teamwork and the integrated action of experts trained in a number of different, though related, scientific fields. Proper emphasis is given to training in these special disciplines in the courses offered by the various departments. However, it is impossible for every student to take all the courses, and certain individuals may have no contact with one or more departments. These general public health forums have the advantage of cutting across departmental lines. They give every student some contact with all sections of the School, and make it possible for him to learn something of the objectives and interests of each department and its relation to public health as a whole.

The main purposes of these lectures and seminars are to help orient the student, to assist him in visualizing the wide field covered by his chosen profession, and to stimulate constructive thinking and planning for his future activities.

Some of the sessions are devoted to a broad survey of the historic development, the present status, and the future objectives of public health; others present special applications of basic public health disciplines.

Public Health 1a. An Introduction to Public Health

Lectures and seminars. *Mondays, Wednesdays and Fridays, 11-1, first period.* Members of the Faculty and guest lecturers.

Credit 3 units.

The success of programs for community disease control depends upon working intelligently with the dynamic forces active in community life. This course of instruction deals with social and biological characteristics of human populations, the organization and behavior of human communities, and their relationship to the environment. Emphasis is placed upon those aspects of group life which are of particular importance for the health of the community. The objective of the course is to provide a knowledge of human populations and of interpersonal relationships in the community in preparation for the study of public health, in the same sense that anatomy, physiology and psychology contribute to the study of medicine. The course is presented in three parts.

A. *Human Ecology.* Dr. REED and associates. *Mondays or Wednesdays, 16 hours.*

Lectures in this part of the course present basic facts and principles concerning the relationship of man to his environment. The findings from studies of plant and animal ecology are used as a foundation because of their increasing importance in understanding the nature of the biological and physical forces acting upon human individuals and populations. Emphasis is then placed upon both the biological and the social means by which man adapts to these environmental forces or attempts to control them.

B. *Community Organization.* Dr. LEAVELL and associates. *Mondays or Wednesdays, 16 hours.*

A series of lectures is designed to provide basic understanding of how people live together in families and other groups; their basic motivations and drives and methods of learning, and the ways used in organizing themselves to perform desired functions. Modern public health depends upon the co-operation and understanding of the people. To bring understanding to the people, they must be understood. The social sciences — sociology, cultural anthropology, group psychology, economics and political science — are throwing new light on the problem and providing working tools useful for health promotion.

C. *Joint Seminars.* Dr. LEAVELL, Dr. REED, and associates. *Fridays, 16 hours.*

The class is divided into groups. By case study of situations drawn from actual practice in public health, each group considers individually a selected problem, the causes that determined it, the means by which to measure its extent, and the community services applicable to its solution. The purpose is to illustrate and enlarge the principles developed under A. and B.

Public Health 3c. History and Philosophy of Public Health

Seminars. *Saturdays, 10-12, third period.* Members of the Faculty.

Credit 1 unit.

The growth, development and philosophy of the modern health movement, particularly in the Anglo-Saxon countries is discussed. Cultural, social and economic forces that have influenced the movement are studied in relation to the evolution of health sciences and services.

DEPARTMENT OF BIOSTATISTICS

HUGO MUENCH, A.B., M.D., DR.P.H., A.M. (hon.), *Professor of Biostatistics and Head of the Department*

JANE WORCESTER, A.B., DR.P.H., *Associate Professor of Biostatistics*

ROBERT B. REED, A.B., A.M., PH.D., *Associate Professor of Biostatistics and Human Ecology*

MARGARET E. DROLETTE, A.B., *Assistant in Biostatistics*

Graduates of the School, whatever their chosen careers, will find themselves in positions where they must initiate programs and evaluate the results of the programs. Whether their work lies in administration or in research, students must be able to pose and to answer questions and to read critically the literature in their fields. Knowledge of the scientific method is essential to these purposes.

Since most students come to the School with no background in statistical technics and their application, the first course has been organized to present essential methodology, with the realization that few students will become workers primarily in the field of statistics. Relatively little emphasis is laid on technics per se, and these have been included only in the amount necessary for an appreciation of principles involved and methods used. The main stress is on the interpretation of quantitative data affected by a multiplicity of causes, the understanding of the meaning of the usual measures employed and the legitimate fields of use of these measures. In general, the first course is designed to help the student state his question clearly, determine the method

which will answer the question and establish the limits within which the answer has validity.

Additional, elective courses provide opportunities for basic grounding in statistical methods and analytical procedures which are of value to the student who will be engaged in the fields of epidemiology, of laboratory research or of administration.

Biostatistics 1a, b. Principles of Biostatistics

Lectures, discussions, and laboratory. *Mondays and Fridays, 2-5, first and second periods.* Staff of the Department.

Credit 4 units.

Subjects presented include collection, tabulation, and elementary analysis of data; measures of center and of dispersion; and sampling from populations. The aim of the course is to prepare the student to draw justified conclusions from numerical data.

Biostatistics 2c, d. Statistical Analysis (Epidemiological)

Lectures, discussions, and laboratory. *Mondays and Wednesdays, 9-12, third period; Mondays, 9-12, fourth period.* Staff of the Department.

Credit 3 units.

The epidemiologist is introduced to statistical methods which he will find of use in the attack on problems in his field. The subject matter includes the consideration of normal variability, the treatment of association of variables and the application of simple scientific hypotheses which can be treated mathematically. During the third period, the course runs concurrently with Biostatistics 3c, d.

Prerequisites: Biostatistics 1a, b; Epidemiology 1b; or their equivalents.

Biostatistics 3c, d. Statistical Analysis (Laboratory)

Lectures, discussions and laboratory. *Mondays and Wednesdays, 9-12, third period; Wednesdays, 9-12, fourth period.* Staff of the Department.

Credit 3 units.

This course is given concurrently with Biostatistics 2c, d during the third period, when material of interest to laboratory research workers as well as to epidemiologists is presented. During the latter part of the course, emphasis is on statistical technics useful in biological laboratories, including consideration of small sample theory, variance analysis, dosage response and the planning of experiments.

Prerequisites: Biostatistics 1a, b; Epidemiology 1b; acquaintance with laboratory methods in at least one field of the biological sciences.

Biostatistics 4c, d. Statistical Analysis (Administrative)

Lectures and seminars. *Tuesdays, 2-4, third and fourth periods.* Staff of the Department and of other Departments.

Credit 2 units.

This is a joint course with the Departments of Maternal and Child Health (see Maternal and Child Health 5c, d) and Public Health Practice (see Public Health Practice 12c, d).

The first part of the course deals with the use and value of statistical data on population, natality, mortality and morbidity. Consideration is given to the nature of the data, the mechanism of their collection and the extent and limitation of the fields to which they can be applied.

The second part of the course deals specifically with the use and value of "service statistics" pertaining to such fields as general medical care programs and maternal and child health services, and to special programs for the control of specific diseases. Actual data collected by various means are discussed and analyzed as to their general validity and as to their value in accurately measuring problems and accomplishments.

Prerequisites: Biostatistics 1a, b; basic courses in administration.

Biostatistics 5c, d. Seminar in Biostatistics

Seminars. *One period of two hours weekly throughout the third and fourth periods.* Time to be arranged. Staff of the Department.

Credit 2 units.

This seminar is arranged primarily for the Department's staff. However, occasional students with special interest and sufficient preparation will be admitted.

Biostatistics 20. Biostatistical Research

Time and credit to be arranged according to amount of work done.

Reading and research in selected topics of biostatistics by students specializing in the field or those who desire supervision in working out statistical problems in their special fields of interest. Opportunity is given to take informal part in studies being carried on by members of the Department's staff, such as the statistical evaluation of measures of normal growth.

DEPARTMENT OF EPIDEMIOLOGY

JOHN E. GORDON, S.B., PH.D., M.D., A.M. (hon.), F.R.C.P. (Lond.), *Professor of Preventive Medicine and Epidemiology and Head of the Department*

THEODORE H. INGALLS, A.B., M.D., *Associate Professor of Epidemiology*

A. DANIEL RUBENSTEIN, A.B., M.D., M.P.H., *Assistant Professor of Epidemiology*

THOMAS F. PUGH, M.D., M.P.H., *Assistant Professor of Epidemiology*

JOHN J. POUTAS, A.B., M.D., *Visiting Lecturer on Epidemiology*

FRANCIS B. CARROLL, D.M.D., M.D., M.P.H., *Visiting Lecturer on Epidemiology*

CONRAD WESSELHOEFT, M.D., *Visiting Lecturer on Infectious Diseases*

JOHN C. AYRES, S.B., M.D., M.P.H., *Instructor in Epidemiology*

EDWARD J. O'ROURKE, A.B. M.D., M.P.H., *Instructor in Epidemiology*

HUGH L. C. WILKERSON, S.B., M.D., M.P.H., *Research Fellow in Epidemiology*

RICHARD L. BUTLER, A.B., D.M.D., *Research Fellow in Epidemiology*

CHARLES H. MOSELEY, A.B., M.D., M.P.H., *Research Fellow in Epidemiology*

RICHARD A. PRINDLE, M.D., *Research Fellow in Epidemiology*

CARL E. TAYLOR, S.B., M.D., M.P.H., *Research Fellow in Epidemiology*

W. LLOYD AYCOCK, M.D., *Associate Professor of Preventive Medicine and Hygiene*

LOUIS WEINSTEIN, S.M., PH.D., M.D., *Lecturer on Infectious Diseases*

Epidemiology 1b. Principles of Epidemiology

Lectures and seminars. *Mondays and Fridays, 11-1, Wednesdays, 11-12, second period.* Dr. GORDON and associates.

Credit 2.5 units.

This introductory course in epidemiology is looked upon as a second step in developing the basic conceptual scheme of public health, namely that the health problems of populations differ from those of the individual and are not a composite of the separate experiences of persons comprising the group. The course on Human Ecology establishes health and disease in man as resultants of ecological forces that originate either in man as an organism or in the environment in which he lives. The group concept is defined.

Epidemiology takes one part of the total problem, that of mass disease. Its principal obligation is to develop means by which mass disease is recognized and by which the multiple factors in causation are evaluated, those which determine origin and also govern course and extent. Thus conceived, epidemiology is medical ecology, and the diagnostic discipline of mass disease. Sanitary engineering develops the specific factors of the physical and biological environ-

ment. Biostatistics contributes the unbiased analysis of collected facts. The whole association of disciplines is in aid of public health practice, to permit programs to be formed and measures of prevention and control to be instituted, based first on established cause and secondly on the nature of the individual problem. The ultimate aim, from ecology through public health practice, is a better adaptation of man to his environment and of the environment to man.

Multiple causation is a principle in mass disease; therefore epidemiology is a multiphasic discipline. It draws upon all skills within public health and medical science. Its practice becomes increasingly a team effort. All workers in the field need to be familiar with the objectives and methods of epidemiology, first because they are often called upon to take part in epidemiologic studies, and secondly because these methods enter into all activities relating to mass disease.

A command of the technical method of epidemiology and its specific application to various fields is believed beyond the needs of students in general. As a consequence, this required course is limited to principles, which have developed primarily from knowledge acquired from the communicable diseases. Illustrative examples of application to other fields such as nutrition, traumatic injuries, maternal and child health, industrial hygiene, and chronic degenerative and neoplastic diseases are presented through seminar discussion, to give understanding of the scope of the field and the broad uses of the epidemiologic method.

Prerequisite: Biostatistics 1a, b.

Epidemiology 2c. Common Communicable Diseases

Lectures, demonstrations, clinics and conferences. *Tuesdays and Thursdays, 12-1; Clinics, Fridays, 3.30-5, third period.* Dr. INGALLS, Dr. WEINSTEIN.

Credit 1.5 units.

The common communicable diseases of temperate climates are presented with special reference to the problems of the health officer and the epidemiologist. Clinical manifestations, diagnostic methods, isolation of patients in home and hospital and methods of treatment are discussed. Prevalence of these diseases and epidemic behavior in family and small group populations are illustrated.

Epidemiology 3b, 3c, 3d. Clinical Infectious Diseases

Clinics. *Saturdays, 9-11, second, third, or fourth periods.* Dr. WEINSTEIN and associates.

Credit .5 unit in each period.

Clinical conferences on the care and management of patients with acute infectious diseases are held weekly by the staff of the Haynes Memorial Hospital. Topics are selected according to available clinical material. Students may attend in one or more periods.

Epidemiology 5c, d. The Practice of Epidemiology.

Conferences, seminars and laboratory exercises. *Tuesdays and Thursdays, 9-12, third and fourth periods.* Dr. RUBENSTEIN, Dr. PUGH and associates.

Credit 4 units.

A conference and laboratory course dealing principally with the epidemiology of acute communicable disease. The laboratory work demonstrates field methods used in collection, analysis and interpretation of data derived from epidemic and endemic situations. Modes of infection are defined and the laws of epidemics examined. Correlation of clinical, field and laboratory procedures is emphasized in the development and evaluation of programs for prevention of disease and management of epidemics. Course 5c may be elected in sequence with Epidemiology 5d or with Public Health Practice 16d or with both, but not alone.

Prerequisite: Epidemiology 1b.

Epidemiology 6d. Quantitative Method in Epidemiology

Lectures and seminars. *Saturdays, 9-11, fourth period.* Dr. IPSEN.

Credit 1 unit.

This course is designed for students with sound preparation in biology and biostatistics. The principal concern is with theoretical epidemiology and causality of mass disease. Quantitative methods are applied to analysis of the movements of disease in population groups with special consideration of the forces that act to produce epidemics.

Epidemiology 7d. Military Preventive Medicine

Seminars. *Fridays, 11-1, fourth period.* Dr. GORDON.

Credit 1 unit.

A series of seminars, conferences, and demonstrations concerned with administrative and professional problems in military preventive medicine. Designed primarily for students from the military services.

Admission by permission of the instructor.

Epidemiology 15a, b, c, d. Advanced Epidemiology

Seminars. *Wednesdays, 2-4, first period; 3-5, second period; Mondays, 2-4, third and fourth periods; other time to be arranged.* Dr. GORDON, Dr. INGALLS.

Credit 1 to 3 units in each period.

An informal course designed to further a command of the epidemiologic method through individual training and practical experience. Each student is assigned a problem or develops a previous interest through field study, laboratory experiment, or library investigation. Seminars are devoted to discussion of these problems. Admission is by permission of the instructors and

credit is in proportion to the amount of time devoted to the work. No more than ten students will be accepted.

Epidemiology 20. Research in Epidemiology

Qualified students are offered the opportunity to undertake special studies in the acute communicable diseases, or in community problems of non-communicable processes or injuries. Problems may be assigned or aid is provided in developing individual interests.

Epidemiology 30c. Operational Epidemiology

Field visits January 28 to February 2, inclusive. Dr. O'ROURKE.

Credit 1 unit.

A week of planned visits in the New York area, limited to field and research activities in epidemiology, and including the Bureau of Preventable Diseases, City of New York Department of Health, The Rockefeller Foundation, and Lederle Laboratories.

DEPARTMENT OF INDUSTRIAL HYGIENE

PHILIP DRINKER, S.B., CHEM.E., S.D. (hon.), LL.D., A.M. (hon.), *Professor of Industrial Hygiene and Head of the Department*

CONSTANTIN P. YAGLOU, B.A., S.B., M.M.E., A.M. (hon.), *Professor of Industrial Hygiene*

LESLIE SILVERMAN, S.B., S.M., S.D., *Associate Professor of Industrial Hygiene*

ROSS A. MCFARLAND, A.B., PH.D., S.D. (hon.), *Associate Professor of Industrial Hygiene*

CHARLES R. WILLIAMS, A.B., A.M., PH.D., *Assistant Professor of Industrial Hygiene*

ROBERT B. O'CONNOR, A.B., M.D., *Assistant Professor of Industrial Medicine*

WILLIAM H. FORBES, A.B., A.M., DR. PHIL., *Lecturer on Industrial Hygiene*

EMMA S. TOUSANT, LL.B., *Instructor in Industrial Hygiene*

HARRIET L. HARDY, A.B., M.D., *Instructor in Industrial Hygiene*

MARY O. AMDUR, S.B., PH.D., *Research Associate in Industrial Hygiene*

JACK W. DUNLAP, S.B., S.M., *Research Associate in Industrial Hygiene*

MELVIN W. FIRST, S.B., S.M., S.D., *Research Associate in Industrial Hygiene*

ALFRED L. MOSELEY, A.B., A.M., *Research Associate in Industrial Hygiene*

RICHARD DENNIS, S.B., S.M., *Research Fellow in Industrial Hygiene*

EDWARD M. BERLY, S.B., S.M., *Research Fellow in Industrial Hygiene*

RALPH M. MOSCHELLA, S.B., B.M.E., *Research Fellow in Industrial Hygiene*

CHARLES E. BILLINGS, S.B., *Research Fellow in Industrial Hygiene*

SHELDON FRIEDLANDER, S.B., S.M., *Research Fellow in Industrial Hygiene*

AUGUST T. ROSSANO, JR., S.B., S.M., *Research Fellow in Industrial Hygiene*

ROBERT M. THOMSON, *Assistant in Industrial Hygiene*

B. A. LINDBERG, M.E., *Associate Professor of Business Administration*

C. GUY LANE, A.B., M.D., *Clinical Professor of Dermatology, Emeritus*

ALBERT O. SEELER, A.B., M.D., *Instructor in Medicine*

Industrial Hygiene 1c. Basic Problems in Industrial Hygiene

Lectures and demonstrations. *Mondays and Fridays, 2-4, Wednesdays, 1:30-5, third period.* PROFESSOR DRINKER, Dr. SEELER, and associates.

Credit 3 units.

A course of lectures, demonstrations, and inspections showing the relation of working conditions to health, with special reference to elimination of industrial hazards and prevention and treatment of industrial disabilities and diseases.

Industrial Hygiene 2b and 2c, d. Industrial Air Analysis

Laboratory work. *Tuesdays and Thursdays, 2-5, second, third and fourth periods.* Dr. SILVERMAN, Dr. WILLIAMS.

Credit 2 units in each period.

Determination and interpretation of adverse conditions found in work places of all types, such as factories and mills, and in assembly halls; methods employed in determining physical properties of the air, such as temperature, humidity, and air motion; atmospheric impurities and normal constituents of the air — gases, dusts, bacteria, and pollens; efficiencies of protective devices — masks, respirators, mechanical dust-collecting apparatus, hoods, and exhausters; efficiencies of air-conditioning equipment.

Course 2b is intended for public health engineers and physicians enrolled in the Industrial Health program. Those students taking course 2c, d will not take 2b. Course 2c, d (Eng. 281b) is primarily for students in industrial hygiene.

Industrial Hygiene 3a, b, c, d. Industrial Medical Clinics

Time and credit to be arranged. Dr. SEELER, Dr. HARDY, and associates.

This course runs throughout the year. Students participate in appropriate clinics at teaching hospitals and in medical clinics of various industries.

Industrial Hygiene 4c. Personnel Administration

Lectures. *Mondays, Wednesdays and Fridays, 9-10, third period.* Associate Professor LINDBERG.

Credit 1.5 units.

The objectives of this course are to explore various types of industrial and business organizations, to develop an appreciation of the various relations between departmental functions, and to trace the effects of these relations upon the individual worker, the supervisor, the organization itself, and society.

The functions of a medical department as well as its interrelations with other line and staff departments are considered. Special consideration is given to problems in the administration of a medical department where collective bargaining relations exist. These functions, activities, and problems are studied through a series of cases covering employee health, employee safety, rehabilitation, and retirement programs.

Industrial Hygiene 5c. Human Problems of Adjustment in Industry

Lectures and demonstrations. *Tuesdays and Thursdays, 12-1, third period.* Dr. McFARLAND.

Credit 1 unit.

Initial emphasis is placed on the design and operation of equipment and working procedures in relation to the operator. The techniques of various biological sciences are used to establish design criteria and minimum standards. A study of job requirements is then made to determine the psychologic and physical demands placed upon the worker in achieving successful job placement. With this background, principles are derived for the control of accidents, operational fatigue, and other basic factors influencing efficiency and health. Attention is also given to the problems of gerontology and of workers with physical handicaps. The course is concluded with emphasis on mental and emotional adjustment of workers and factors influencing effective group functioning.

Industrial Hygiene 6c. Industrial Medicine

Lectures and seminars. *Mondays, Wednesdays and Fridays, 10-12, third period.* Dr. O'CONNOR and associates.

Credit 3 units.

This course is devoted to medical problems of importance to the industrial physician. The following are among the subjects that are considered: functions of the industrial physician; functions of the industrial nurse; organization of industrial medical departments; medical aspects of workmen's compensation; preplacement examinations; geriatric problems in industry and rehabilitation; relation of trauma to disease.

Industrial Hygiene 7d. Industrial Hygiene Engineering

Lectures and problems. *Mondays, Wednesdays, and Fridays, 2-4, fourth period.* Professor DRINKER, Dr. SILVERMAN.

Credit 3 units.

Control of industrial conditions by engineering methods; field trips, reports, design and operation of equipment. For engineers. (Industrial Hygiene 1c and 7d are classified as Eng. 282b.)

Industrial Hygiene 8d. Hygienic Aspects of Ventilation

Lectures. *Mondays, Wednesdays and Fridays, 8-9, fourth period, at Pierce Hall, Cambridge.* Professor YAGLOU.

Credit 1.5 units.

Selected topics in ventilation of interest to students in sanitary engineering and in public health.

Engineering 280a. Heating and Air Conditioning

Lectures. *Mondays, Wednesdays, and Fridays, 8-9, fall term, at Pierce Hall, Cambridge.* Professor YAGLOU.

The theory and practice of heating and air conditioning. For engineers.

Industrial Hygiene 20. Research

A limited number of qualified students will be given an opportunity to do research work in problems of industrial health including occupational disease, toxicology, air cleaning, heating, ventilating, and air conditioning, by arrangement with the head of the Department.

DEPARTMENT OF MATERNAL AND CHILD HEALTH

HAROLD C. STUART, LITT.B., M.D., A.M. (hon.), *Professor of Maternal and Child Health and Head of the Department*

WILLIAM M. SCHMIDT, S.B., M.D., *Associate Professor of Maternal and Child Health Practice*

BERTHA S. BURKE, A.B., A.M., *Assistant Professor of Maternal and Child Nutrition*

SAMUEL B. KIRKWOOD, A.B., M.D., *Assistant Professor of Maternal Health*

ELIZABETH P. RICE, A.B., S.M., *Assistant Professor of Medical Social Work*

SAMUEL W. DOOLEY, S.B., M.D., *Assistant Professor of Child Health*

J. ROSWELL GALLAGHER, A.B., M.D., *Assistant Professor of Child Health*

LEONA BAUMGARTNER, A.B., PH.D., M.D., *Visiting Lecturer on Maternal and Child Health*

EDWIN F. DAILY, M.D., *Visiting Lecturer on Maternal and Child Health*

STANTON GARFIELD, A.B., M.D., M.P.H., *Instructor in Child Health*

ROBERT G. RICE, A.B., S.B., M.D., C.M., M.P.H., *Instructor in Maternal and Child Health and Director of Division of Maternal and Child Health, Department of Public Health of Massachusetts*

R. RITA FITZGERALD, A.B., S.M., *Instructor in Maternal and Child Health*

RUTH BUTLER, A.B., S.M., *Research Associate in Medical Social Work*

NAN BERNSTEIN, S.B., *Research Fellow in Maternal and Child Nutrition*

CHARLES A. JANEWAY, A.B., M.D., *Thomas Morgan Rotch Professor of Pediatrics*

DAVID D. RUTSTEIN, S.B., M.D., *Professor of Preventive Medicine*

WILLIAM T. GREEN, A.M., M.D., *Clinical Professor of Orthopedic Surgery*

CLEMENT A. SMITH, M.D., *Associate Professor of Pediatrics at the Boston Lying-in Hospital*

STEWART H. CLIFFORD, M.D., *Clinical Associate in Pediatrics*

LONDON SNEDEKER, A.B., M.D., M.P.H., *Instructor in Pediatrics*

ROBERT M. RAVVEN, A.M., M.D., *Instructor in Psychiatry*

DANE G. PRUGH, A.B., M.D., *Instructor in Pediatrics*

The public health problems and activities which concern a division of maternal and child health have to do with many fields of science. Some of these relate to the health and welfare of all age groups, but are of particular importance to the infant or the child. Others are problems of early life only, or

require special services for these age groups. Still others relate only to the health of women during the childbearing period. Since this range of subjects is very broad, the Department gives little attention to those problems pertaining to health which are more fully considered by other departments of the School. On the other hand, the special problems peculiar to maternity and childhood are considered, even though they may relate to the general fields of other departments. Thus the special aspects of diet during pregnancy and lactation, infant feeding, and diet at succeeding periods of childhood are emphasized. Communicable diseases commonly occurring in childhood are not studied in all aspects, but immunization procedures and environmental control measures particularly applicable in early life are discussed. Administrative procedures for the conduct of special maternal and child health services are given consideration, in close collaboration with the Department of Public Health Practice.

A general course is given in the second period of the academic year for students who are not specializing in this field but who desire to obtain a broad understanding of the content and special features of maternal and child health services at various levels of government. This course is open to all students of the School except those who are majoring in this Department.

A program of seminars, covering the special problems of maternal and child health, is conducted during the first, third and fourth periods of the academic year; designed primarily for and required of students specializing in this field. During the first period, the problems of maternity, infancy, childhood, and adolescence are dealt with; whereas, during the third and fourth periods, attention is devoted to the services organized to meet these problems and the administrative aspects of these services. In addition, students majoring in maternal and child health are required to do individual work, including field study, during the third and fourth periods as described under Maternal and Child Health 20.

The Department offers advanced seminar courses as electives for those who are interested and qualified. In the second period, a course is given in social and psychologic problems of maternity and childhood, and in the third period, a course in maternal and child nutrition. A course is also given jointly with the Department of Biostatistics during the third and fourth periods, dealing with the statistical analysis of problems in maternal and child health.

In addition to the courses required of all students enrolled for the Master of Public Health degree, students majoring in maternal and child health are expected to take as many of the following courses as their schedule permits, approval of their selections by the head of the Department concerned being required: Public Health Nutrition (first period) and Basic Nutrition (second and third periods) in the Department of Nutrition; Organization of Medical Care (second period), and Public Health Administration, Health Education, Public

Health Nursing and Social Work (third and fourth periods) in the Department of Public Health Practice; at least one advanced course in the Department of Maternal and Child Health; at least one field trip during a free period between scheduled courses and at least four units of individual work on a subject of special interest.

Clinical demonstrations and field visits will be arranged in the regular courses from time to time in connection with discussions of clinical problems and services, especially in time set aside for individual work in the third and fourth periods. These may be at the Boston Lying-in Hospital, the Children's Medical Center, or in public or private health agencies in the vicinity. It should be understood, however, that clinical training in obstetrics and pediatrics cannot be provided as part of the curriculum offered by this Department.

With the exception of the general course in the second period, all the courses in maternal and child health are organized on a panel discussion or seminar basis, with occasional lectures as required for presentation of material not readily available in the literature. The panel or seminar methods of instruction permit active student participation in discussions, and this participation is encouraged through assignment of subjects for individual presentation.

GENERAL COURSE

Maternal and Child Health 2b. Problems and Services

Lectures and panel discussions. *Tuesdays and Thursdays, 11-1, second period.* Dr. STUART, Dr. KIRKWOOD, Mrs. BURKE, Miss RICE, Miss VARLEY, Dr. SCHMIDT and Dr. DOOLEY.

Credit 2 units.

This is a single course covering maternal and child health services in broad outline. It deals with preventive measures and services designed to meet various health problems of mother, fetus, infant, and child and with the organization and administration of programs dealing with these problems. The services are considered in four major divisions: maternal-newborn, infant and pre-school, school and adolescent, and programs for crippled or handicapped groups. They are also considered from the standpoints of units of government which provide these services and the disciplines which participate in rendering them. This course is designed for all students of public health except those who are concentrating in the field of maternal and child health.

SPECIAL COURSES

(Required of students majoring in the Department)

Maternal and Child Health 1a. Basic Problems

Lectures and seminars. *Mondays, Wednesdays and Fridays, 9-11, first period.* Dr. STUART, Dr. KIRKWOOD, Mrs. BURKE, Miss RICE, Dr. REED, Dr. SCHMIDT, Dr. DOOLEY.

Credit 3 units.

This course deals first with the special problems of maternity in relation to the periods of pregnancy, labor, delivery, and the puerperium, from the standpoints of maternal, fetal, and early infant health. Social, psychologic, nutritional, and other factors in family and community life which have an important bearing on the pregnant woman, as well as on the infant and child, will be presented. The course then deals with basic information regarding the well child and his requirements for normal growth and health. It deals further with the relative importance of different causes of death and illness by age and locality and with the progress thus far made in preventing these occurrences. The purpose here is to provide a better understanding of the extent and nature of the leading problems of maternal and child health. Familiarity with these subjects is essential for work in the field of maternal and child health and is important for those who propose to take the other special courses given by the Department.

Maternal and Child Health 3c, d. Services, Programs, and Administration

Lectures and seminars. *Mondays, Wednesdays, and Fridays, 9-11, third and fourth periods.* Dr. SCHMIDT, Dr. STUART, Miss VARLEY, Miss RICE, Mrs. BURKE and associates.

Credit 6 units.

This course deals with the application through public health services of the knowledge derived from Maternal and Child Health 1a, b. It is designed to provide thorough understanding of the methods of organizing and supervising programs and services at various levels of government and in different types of communities. Administration of programs will be discussed and demonstrations of services afforded whenever circumstances permit. Administrators from the field will participate in the course from time to time as guest lecturers or in panel discussions. In so far as possible the services will be grouped under the headings of Maternal and Newborn Services, Infant and Pre-school Child Health Services, School Health Services, and Programs for Crippled Children. They will also be considered in relation to federal, state, and municipal programs, and services in rural areas. Students majoring in Maternal and

Child Health will be given opportunities to visit clinics and other services concurrently with these seminars in time set aside for Maternal and Child Health 20.

ADVANCED ELECTIVE COURSES

Maternal and Child Health 4b. Social and Psychological Problems

Seminars. *Wednesdays, 1-3, Fridays, 9-11, second period.* Miss RICE and associates.

Credit 2 units.

This course goes more deeply into the basic social, psychologic, and other human factors in the family and community life which have important bearing on the mother and the child. The educational factors will be considered. Members of the Faculty will be assisted by representatives in the fields of education, child psychology, psychiatry, the social sciences, and social work.

Maternal and Child Health 5c, d. Statistical Analysis (Administrative)

Lectures and seminars. *Tuesdays, 2-4, third and fourth periods.* Staff of the Department and of other Departments.

Credit 2 units.

This is a joint course with the Departments of Biostatistics and Public Health Practice. See Biostatistics 4c, d for description.

Maternal and Child Health 8c. Maternal and Child Nutrition

Seminars. *Tuesdays, and Thursdays, 10-12, third period.* Mrs. BURKE and associates.

Credit 2 units.

This course is designed primarily for advanced training of students majoring in public health nutrition or in maternal and child health. It deals with the nutritional requirements of pregnancy and lactation, of infancy, and of the preschool and school child and the adolescent. The practical problems involved in fulfilling these needs are discussed from the physiologic, psychologic and socio-economic aspects. Nutrition services in a well-rounded public health program for maternal and child health are discussed and appraised at the local, state, and federal levels.

Maternal and Child Health 20. Special Assignments for Individual Work

This course is designed specifically for students majoring in maternal and child health or a closely related field. It affords these students an opportunity to do individual work for credit under instructor guidance on problems relating to this special field. Each program will be arranged in conference between

student and instructor and must be accepted in advance by the head of the Department. In general, such programs will include review of the literature on the subject selected, field observations including some original work, and a paper reporting the work done. Students majoring in maternal and child health are required to have 2 units of credit in this course in each of the third and fourth periods. During these periods group field visits, special clinics and individual field assignments are made on Thursdays for which credit up to one unit per period will be given.

Maternal and Child Health 30c and 30d

Field trips for training in maternal and child health services. *Three to five days each during periods in January, and April.* Dr. SCHMIDT, Miss VARLEY, and associates.

Credit 1 unit for each five-day trip.

Students electing these field exercises have opportunities to see programs in operation under Departments of Maternal and Child Health and to participate in discussions with members of these departments regarding practical problems of service and administration.

DEPARTMENT OF MICROBIOLOGY

JOHN C. SNYDER, A.B., M.D., *Professor of Microbiology and Head of the Department*

EDWARD S. MURRAY, A.B., M.D., M.P.H., *Associate Professor of Microbiology and Assistant Medical Adviser to the Department of Hygiene*

HENRY S. FULLER, S.B., M.D., M.P.H., *Assistant Professor of Microbiology*

ROLLA E. DYER, A.B., M.D., LL.D., *Visiting Lecturer on Microbiology*

GEOFFREY EDSALL, M.D., *Visiting Lecturer on Microbiology*

HERALD R. COX, A.B., SC.D., SC.D. (hon.), *Visiting Lecturer on Microbiology*

ADELE KARP, B.SC., PH.D., *Special Research Associate in Microbiology*

JAMES A. McCOMB, D.V.M., *Instructor in Microbiology and Assistant Director of the Institute of Laboratories, Department of Public Health of Massachusetts*

JOHN M. NEWELL, A.B., SC.D., *Instructor in Microbiology and Senior Chemist, Institute of Laboratories, Department of Public Health of Massachusetts*

FRANKLIN A. NEVA, S.B., M.D., *Research Fellow in Microbiology*

JUDITH C. MILLER, S.B., *Assistant in Microbiology*

J. HOWARD MUELLER, S.M., PH.D., A.M. (hon.), *Charles Wilder Professor of Bacteriology and Immunology*

JOHN F. ENDERS, A.B., A.M., PH.D., *Associate Professor of Bacteriology and Immunology*

MONROE D. EATON, A.M., M.D., *Associate Professor of Bacteriology and Immunology*

ROBERT A. MACCREADY, S.B., M.D., *Associate in Bacteriology and Immunology and Assistant Director of the Division of Communicable Diseases, Department of Public Health of Massachusetts*

The students in the School of Public Health may be considered in three categories as regards their previous training in microbiology.

(a) *Students who have had extensive experience and who are familiar with the principles and standard methods.* The regularly scheduled courses in the School of Public Health are not designed for this group. However, several opportunities for advanced training are available. By arrangement with the Massachusetts Department of Public Health, students may study in the Wassermann Laboratory, the Diagnostic Laboratory, and the Institute of Laboratories, which includes the Biologic Laboratories. Courses in various aspects of sanitary bacteriology are given by the Department of Sanitary Engineering. Suitably qualified students may wish to take courses in the Harvard Medical School, such as Bacteriology 201, 202 and 203. These courses are described in detail in the official register of the Division of Medical Sciences of the Graduate School of Arts and Sciences.

(b) *Students whose background in microbiology is negligible.* In this group are those students whose previous instruction was received many years before their matriculation in the School of Public Health, and whose activities have not brought them into contact with the developments in bacteriology. Also in this group are the students whose previous instruction was incomplete or unsatisfactory for various reasons. This group is advised to take a basic course in bacteriology and immunology such as Bacteriology 201, Harvard Medical School, or Sanitary Engineering 2a, b (Sanitary Bacteriology) given by the Department of Sanitary Engineering, or a similar course elsewhere.

Candidates for the degree of Master of Public Health who fall in this category are required to complete a basic course in medical or sanitary bacteriology before they may receive their degrees.

(c) *Students who have had satisfactory previous instruction but who have not had extensive experience in the field.* Most of the candidates for the degree of Master of Public Health belong in this group. The regularly scheduled courses in microbiology in the School of Public Health are designed primarily for these students.

Microbiology 1a, b. Principles of Bacteriology and Immunology

Lectures and demonstrations. *Mondays, Wednesdays, and Fridays, 9-10, first period; Fridays, 9-10, second period.* Dr. SNYDER, Dr. MURRAY, and Dr. FULLER.

Credit 2 units.

This course considers the pathogenic bacteria, viruses, rickettsiae, and fungi with emphasis on recent developments. The principles of bacteriology and immunology are discussed in relation to the problems of public health. The course is designed particularly for students who may be engaged in activities pertaining to the field of communicable diseases.

Prerequisite: Medical Bacteriology.

Microbiology 11b. Public Health Laboratory Procedures

Lectures, seminars, and laboratory exercises. *Tuesdays and Thursdays, 2-5, Fridays, 10-11, and one hour per week individual laboratory work, second period.* Dr. MURRAY.

Credit 3 units.

This course considers briefly the standard laboratory technics and includes recent methods for study of representative rickettsiae and viruses. It is intended for students whose activities in the field of public health are likely to involve them in various relations with public health laboratories. However, it does not offer the detailed technical training of the sort needed by persons who will be engaged primarily in laboratory work.

Technics used in serology and bacteriology are demonstrated and short exercises illustrate the important principles of the tests. In the portion of the course devoted to rickettsiae and viruses the students themselves inoculate embryonated eggs and animals by various routes, and perform neutralization tests and red cell agglutination tests.

Limited to twenty students who have completed Microbiology 1a.

Microbiology 12a, b, c, d. Advanced Laboratory Work in Applied Immunology

Laboratory work at the Institute of Laboratories of the Massachusetts Department of Public Health. Time and credit to be arranged. Dr. IPSEN.

Opportunities are offered to properly qualified students for study of and training in the manufacture of biologic products or for original work in problems related to these processes at times to be arranged individually.

Microbiology 13c. Rickettsial Diseases

Lectures and laboratory exercises. *Wednesdays and Fridays, 2-5, and three hours per week individual laboratory work, third period.* Dr. SNYDER, Dr. MURRAY, and Dr. FULLER.

Credit 3 units.

This course considers the rickettsiae of epidemic and murine typhus, Rocky Mountain spotted fever, tsutsugamushi disease, and Q fever. The following subjects are studied in detail: properties of rickettsiae; their isolation and identification in the laboratory; vectors and reservoirs; prevention, control, and treatment of human rickettsial infections. Students perform a few of the standard procedures for isolation of rickettsiae and for diagnosis of these infections by various serologic tests. The course is a basic preparation for research on rickettsiae either in the laboratory or in the field.

Limited to ten students who have had a satisfactory background in the laboratory aspects of bacteriology.

Prerequisite: Microbiology 1a, b and 11b.

Microbiology 14d. Arthropods in Relation to Human Disease

Lectures and laboratory exercises. *Fridays, 9-11; Wednesdays and Fridays, 2-5, fourth period.* Dr. FULLER.

Credit 3 units.

This is a joint course with the Department of Tropical Public Health (see Tropical Public Health 3d). Its objective is to provide the student with a satisfactory background in the field of arthropod-borne diseases. Particular attention is given to arthropods as *vectors* in the effort to integrate entomology with microbiology and with human disease. The course includes discussions of basic principles of morphology, physiology, behavior, and ecology of arthropods as well as control measures. Emphasis is placed on the biologic relationships among vector, pathogen, and host.

Students deal with living hard ticks, soft ticks, parasitoid mites, trombiculid mites, human body lice, bedbugs, reduviid bugs, fleas, adult and larval mosquitoes, and flies. Equipment and technics used in field work are demonstrated.

Microbiology 20. Research

Properly qualified students may do research in the laboratories of the Department. Time and credit to be arranged with the head of the Department.

DEPARTMENT OF NUTRITION

FREDRICK J. STARE, S.B., S.M., PH.D., M.D., A.M. (hon.), *Professor of Nutrition and Head of the Department*

DAVID M. HEGSTED, S.B., S.M., PH.D., *Associate Professor of Nutrition*

ROBERT P. GEYER, S.B., S.M., PH.D., *Assistant Professor of Nutrition*

GEORGE V. MANN, A.B., SC.D., M.D., *Assistant Professor of Nutrition*

JEAN MAYER, B.A., B.S., M.SC., PH.D., D.SC., *Assistant Professor of Nutrition*

MARTHA F. TRULSON, S.B., M.P.H., S.D. IN HYG., *Assistant Professor of Nutrition*

HELEN BAUGHMAN, S.B., S.M., *Instructor in Nutrition*

RENA R. HASKER, S.B., A.M., *Instructor in Nutrition*

VIRGINIA HEGGIE, S.B., M.P.H., *Instructor in Nutrition*

ELEANOR Y. LAWRY, S.B., PH.D., *Research Associate in Physics*

THEODORE B. VAN ITALLIE, S.B., M.D., *Research Associate in Medicine*

LORAIN A. MYERS, S.B., PH.D., *Research Associate in Nutrition*

JOSEPH J. VITALE, S.B., S.M., S.D. IN HYG., *Research Associate in Nutrition*

HILDA S. WHITE, S.B., PH.D., *Research Fellow in Nutrition*

PHILIP L. WHITE, S.B., S.M., S.D. IN HYG., *Research Fellow in Nutrition*

F. EUGENIA WHITEHEAD, S.B., S.M., S.D. IN HYG., *Research Fellow in Nutrition*

STEPHEN B. ANDRUS, S.B., M.D., *Research Fellow in Pathology*

KARL GUGGENHEIM, M.D., *Research Fellow in Nutrition*

A. BAIRD HASTINGS, S.B., PH.D., S.D., *Hamilton Kuhn Professor of Biological Chemistry*

JAMES H. SHAW, S.B., S.M., PH.D., *Assistant Professor of Dental Medicine*

CHARLES S. DAVIDSON, S.B., M.D., *Assistant Professor of Medicine*

Nutrition 1a. Public Health Nutrition

Lectures. *Tuesdays, Thursdays, and Saturdays, 9-10, first period.* DR. STARE and associates.

Credit 1.5 units.

This course deals with the practical application of the science of nutrition to the problems of human nutrition, especially in the field of public health. Dietary requirements are considered in their relation to growth, development, disease, pregnancy, lactation, and the formation and maintenance of dental structures. Methods for establishing the minimum and optimum nutritional

requirements, together with the problems of meeting these requirements, especially for low income groups, are discussed. The purposes and value of nutrition surveys are discussed along with methods of procedure and evaluation of measurements obtained. The place of the nutritionist in the public health program is considered and various fields of a well-rounded nutrition service are discussed as it correlates with the activities of health, welfare, educational, and industrial organizations. The effect of various environmental, social, economic, and psychologic factors upon food habits is also studied as these factors influence the nutritional status of an individual or group of people. The consequences of nutritional deficiencies and the relation of optimum nutrition to national and international health and economy are discussed. The nutritional problems of relief, rehabilitation, famine, and other emergencies are dealt with. The relation of production, distribution, and preparation for the best use of foods is discussed, as are also the problems of food enrichment and fortification.

Nutrition 2b, 2c. Biochemistry and Physiology of Nutrition

Lectures. *Tuesdays, Thursdays, and Saturdays, 9-10, second and third periods.* Dr. HEGSTED and Dr. MAYER.

Credit 1.5 units in each period.

This course deals with the fundamentals of the chemistry and physiology of nutrition. The first period covers such basic subjects as the history and development of the science of nutrition, energy metabolism, biochemistry of fats, carbohydrates, proteins, minerals, and vitamins, and acid-base balance. The second period covers more advanced topics such as the physiology of digestion, intermediary metabolism, enzymes, and vitamin-enzyme-hormone relationships.

Nutrition 3b, 3c, 3d. The Laboratory Basis of Nutrition

Lectures and demonstrations. *Fridays, 9-12, and individual laboratory work to be arranged, second, third, and fourth periods.* Dr. GEYER.

Credit 1.5 units in each period.

This course is a survey of methods pertinent to experimental nutrition. The material covered includes biophysical and chemical technics used in nutritional studies in animal and human experimentation. Students participate in the preparation and presentation of such general topics as chromatography, spectroscopy, microbiological assay, manometric measurements, and purified diet technics. They are then instructed in the actual laboratory procedure pertaining to these technics.

Prerequisites: A basic course in biochemistry and consent of instructor.

Nutrition 4c. Dietary Evaluation

Lectures and laboratory exercises. *Mondays, 2-5, third period.* Dr. TRULSON and Miss BAUGHMAN.

Credit 1 unit.

Methods for obtaining a diet history are discussed and illustrated. The origins, accuracy, and use of food composition tables are considered and their use in translation of the diet history into equivalent food values is illustrated. The principles of diet therapy are discussed. Representative examples of common medical problems such as hypertension, obesity, diabetes, nephritis, and gastrointestinal disease are discussed with description of principles and application of diet therapy. The diet history in nutrition surveys is discussed. Laboratory work will consist of practical exercises in evaluating diets.

Nutrition 5d. Human Nutritional Disease

Lectures. *Mondays, Wednesdays and Fridays, 12-1, fourth period.* Dr. MANN and Dr. DAVIDSON.

Credit 1.5 units.

The emphasis in this course is upon (a) the clinical manifestations of nutritional diseases, (b) the implication of nutrition in the etiology of other than nutritional diseases, and (c) the application of diet and food supplements as therapeutic measures in clinical medicine. The course is presented with the assistance of the Department of Epidemiology which presents the application of epidemiological methods to nutritional problems of clinical medicine.

Nutrition 6a, 6b. Nutrition Seminar.

Seminars. *Thursdays, 4-5.* Staff of the Department.

Credit .5 unit in each period.

Brief discussions of classical literature in fundamental and applied nutrition. Admission limited and subject to the approval of the instructor. In addition, a journal club covering current literature and organized with the participation of the students meets informally on a day to be announced later.

Nutrition 7c, 7d. Advanced Topics in Nutrition

Seminars. *Thursdays, 4-5.* Staff of the Department.

Credit .5 unit in each period.

Properly qualified students present a topic followed by discussion

Prerequisites: Nutrition 2b and consent of instructor.

Nutrition 8c, 8d. Nutrition Ward Rounds

Hospital Rounds. *Saturdays, 10-12, third and fourth periods.* Dr. MANN and Dr. DAVIDSON.

Credit .5 unit in each period.

This course is offered to medically trained candidates who wish to spend two hours per week visiting hospitalized patients in Boston hospitals presenting medical problems of nutritional interest. Students are asked to follow the subsequent course of patients seen and report upon their progress.

Nutrition 20. Research in Nutrition

Time (at least two half-days per week) and credit to be arranged. Staff of the Department.

Facilities are available for advanced work in nutrition along the lines of fundamental research in nutrition and applied nutrition in public health and medicine.

Admission limited and subject to approval of the instructor.

DEPARTMENT OF PHYSIOLOGY

JAMES L. WHITTENBERGER, S.B., M.D., *Professor of Physiology and Head of the Department*

STANLEY J. SARNOFF, A.B., M.D., *Associate Professor of Physiology*

BENJAMIN G. FERRIS, JR., A.B., M.D., *Associate in Physiology*

JERE MEAD, S.B., M.D., *Associate in Physiology*

DAVID B. DILL, B.S., A.M., PH.D., *Visiting Lecturer on Physiology*

HARBEN J. BOUTOURLINE-YOUNG, M.B., B.S., M.D., *Research Associate in Physiology*

JOHN E. AFFELDT, A.B., M.D., *Research Associate in Physiology*

WILLEM S. FREDERIK, M.D., S.M. IN HYG., *Research Associate in Physiology*

GEORGE A. SAXTON, JR., M.D., *Research Fellow in Physiology*

Physiology 1a. Human Physiology and Its Application to Public Health

Lectures and demonstrations. *Tuesdays and Thursdays, 2-5, first period.* Dr. WHITTENBERGER and associates.

Credit 2 units.

A course in human physiology, with particular emphasis on the systems and reactions of the body which are of major importance in public health problems. The course is designed primarily for students of engineering sciences; it is

recommended also to those who need a physiologic background for work in other fields. The course is prerequisite to Physiology 2d for those who lack adequate training in physiology.

Physiology 2d. Environmental Physiology

Lectures and conferences. *Tuesdays and Thursdays, 12-1, fourth period.*
Dr. WHITTENBERGER, Dr. FORBES and Dr. MEAD.

Credit 1 unit.

The physical and chemical constituents of man's surroundings have definite and sometimes critical effects on his health and productivity. These effects can be observed universally, but are of special importance in industry, where large numbers of people are exposed to extremes of factors such as heat, barometric pressure, radiation, and atmospheric contamination.

One of the purposes of physiology instruction in public health is to provide information on the physical and mental reactions of man to his environment, as a basis for logical control of that environment by engineers and health officers.

Prerequisite: Physiology 1a or its equivalent.

Physiology 20. Research in Physiology

Properly qualified students are given opportunities to work in the laboratory provided they can spend at least four months of undivided time.

DEPARTMENT OF PUBLIC HEALTH PRACTICE

HUGH R. LEAVELL, S.B., M.D., DR.P.H., *Professor of Public Health Practice and Head of the Department*

FRANZ GOLDMANN, M.D., *Associate Professor of Medical Care*

LEONID S. SNEGIREFF, M.D., M.P.H., DR.P.H., *Associate Professor of Cancer Control*

ERICH LINDEMANN, PH.D., M.D., *Associate Professor of Mental Health*

C. WALTER CLARKE, A.B., A.M., M.B., CH.B., *Clinical Professor of Public Health Practice and Executive Director, American Social Hygiene Association*

VLADO A. GETTING, A.B., M.D., DR.P.H., *Clinical Professor of Public Health Practice and Commissioner of Public Health, Department of Public Health of Massachusetts*

ALFRED L. FRECHETTE, M.D., M.P.H., *Assistant Professor of Public Health Practice and Director, Health, Hospital and Medical Care Division, United Community Services of Metropolitan Boston*

ALTON S. POPE, A.B., M.D., DR.P.H., *Assistant Professor of Public Health Practice and Deputy Commissioner of Health, Department of Public Health of Massachusetts*

NORBERT A. WILHELM, S.B., M.D., *Assistant Professor of Public Health Practice and Director, Peter Bent Brigham Hospital*

W. FRED MAYES, S.B., M.D., M.P.H., *Assistant Professor of Public Health Practice and Health Officer, Town of Brookline, Massachusetts*

FREDERICK L. W. RICHARDSON, JR., S.B., PH.D., *Lecturer on Mental Health*

HELEN L. ROBERTS, A.B., M.D., M.P.H., *Lecturer on Public Health Practice and Director of Harvard School of Public Health Field Training Unit*

BENJAMIN D. PAUL, A.B., PH.D., *Lecturer on Social Anthropology*

BERYL J. ROBERTS, S.B. IN ED., M.ED., M.P.H., *Associate in Health Education*

MARGARET L. VARLEY, S.B., M.P.H., *Associate in Public Health Nursing*

HUBERT S. COFFEY, S.B., PH.D., *Lecturer on Mental Health*

JOHN H. CAULEY, M.D., M.P.H., *Lecturer on Public Health Practice and Commissioner of Public Health, City of Boston Health Department*

CRAWFORD F. SAMS, A.B., S.M., M.D., *Visiting Lecturer on Public Health Practice*

RICHARD F. BOYD, A.B., M.D., M.P.H., *Visiting Lecturer on Public Health Practice and Regional Medical Director, U. S. Public Health Service*

HOWARD A. RUSK, A.B., M.D., SC.D. (hon.), *Visiting Lecturer on Public Health Practice*

WILLIAM S. STONE, S.B., S.M., M.D., PH.D. (hon.), *Visiting Lecturer on Public Health Practice*

ROY F. FEEMSTER, A.B., M.D., DR.P.H., *Instructor in Public Health Practice and Director, Division of Communicable Diseases, Department of Public Health of Massachusetts*

HERBERT L. LOMBARD, A.B., M.D., M.P.H., *Instructor in Public Health Practice and Director, Division of Cancer and Other Chronic Diseases, Department of Public Health of Massachusetts*

ERNEST M. MORRIS, A.B., M.D., C.M., M.P.H., *Instructor in Public Health Practice and Director of Public Health, City of Newton, Massachusetts*

ROBERT E. ARCHIBALD, M.D., M.P.H., *Instructor in Public Health Practice and Deputy Commissioner, Department of Public Health of Massachusetts*

ARTHUR E. BURKE, S.B., M.D., M.P.H., *Instructor in Public Health Practice and District Health Officer, Department of Public Health of Massachusetts*

LOREN D. MOORE, M.D., M.P.H., *Instructor in Public Health Practice and First Assistant to the Commissioner, Department of Public Health of Massachusetts*

SIDNEY COBB, S.B., M.D., *Instructor in Public Health Practice and Director, Nashoba Associated Boards of Health*

FRANKLYN B. AMOS, M.D., M.P.H., *Instructor in Public Health Practice*

LUCY G. WHITE, A.B., A.M., *Instructor in Public Health Nursing*

DEAN W. ROBERTS, A.B., M.D., M.P.H., *Instructor in Medical Care*

AUTINO FIORE, A.B., M.D., M.P.H., *Instructor in Public Health Practice and Commissioner of Health, City of Cambridge Health Department*

GEORGE KAHN, S.B., M.D., M.P.H., *Instructor in Public Health Practice and Medical Inspector, City of Boston Health Department*

WARREN T. VAUGHAN, JR., S.B., M.D., *Research Associate in Mental Health*

OLIVE M. LOMBARD, B.SC., S.M. IN HYG., *Research Associate in Cancer Control*

MANON MCGINNIS, A.B., *Research Associate in Psychiatric Social Work*

SUZANNE T. VAN AMERONGEN, M.A., M.D., *Research Fellow in Mental Health*

COZETTE HAPNEY, S.B., M.P.H., *Assistant in Medical Care*

JAMES M. DUNNING, A.B., D.D.S., M.P.H., *Dean, Harvard School of Dental Medicine*

STANLEY COBB, A.B., M.D., *Bullard Professor of Neuropathology*

PAUL K. LOSCH, D.D.S., *Assistant Professor of Clinical Dentistry*

SHIELDS WARREN, A.B., M.D., *Professor of Pathology at the New England Deaconess Hospital*

F. WILLIAM MARLOW, JR., S.B., M.D., *Associate in Medicine*

HENRY H. BREWSTER, A.B., M.D., *Instructor in Psychiatry*

LEMOYNE WHITE, A.B., M.D., *Instructor in Psychiatry*

The general objective of the Department of Public Health Practice is to develop plans and procedures for the administration of public health programs in governmental and in voluntary health agencies. Work is based on other courses given in the school and the general background of knowledge in the natural and physical sciences and the social sciences, and is conducted through lectures, seminars, work shops, independent investigation and field observations.

One course in the Department, Public Health Practice 1b, is required of all candidates for the Master of Public Health degree. Other courses are elective although it is anticipated that all majors in public health practice will take Public Health Practice 10c, d and the accompanying field work, Public Health Practice 30c. Most students majoring in this field of public health practice should also take Public Health Practice 2b, Organization of Medical Care.

Special curricula are designed for health officers, cancer control administrators, medical care administrators, mental health workers, veterinary public health workers, dental public health workers, public health nurses and health educators.

Public Health Practice 1b. Principles of Public Health Practice

Seminars and conferences. *Mondays and Wednesdays, 9-11, second period.* Dr. LEAVELL and associates.

Credit 2 units.

An introduction to public health practice in which the principles of administrative organization, personnel management, financing of health services and public health law are presented as the basis of public health administration.

Special consideration is given to the work of the various members of the public health team, and to the types and inter-relationships of the official and voluntary agencies in which they work.

Public Health Practice 2b. Organization of Medical Care

Lectures and discussions. *Tuesdays and Thursdays, 2-4, second period.* Dr. GOLDMANN.

Credit 2 units.

An orientation course on the development and present state of medical-care programs organized under the auspices of public and voluntary agencies. Discussion of the resources in medical and related personnel, and in hospitals, clinics, and custodial institutions; of the utilization of existing services and the cost of medical care; and of the basic methods of organizing and paying for professional and hospital services. Description of tax-supported medical-care programs administered by local, state, and federal agencies and of voluntary prepayment plans of various types.

Public Health Practice 3b. Psychosocial Problems

Lectures and seminars. *Wednesdays, 3-5, second period.* Dr. LINDEMANN and associates.

Credit 1 unit.

This course is concerned with the study of abnormal behavior resulting in social problems and with the mechanisms which produce abnormal mental reactions. Methods of handling these problems through community resources are discussed.

Public Health Practice 4a. Control of Cancer

Lectures and discussions. *Tuesdays and Thursdays, 11-1, first period.* Dr. SNEGIREFF.

Credit 2 units.

Cancer control is discussed from the viewpoint of the administrator. Authorities in the various aspects of the cancer control program discuss specific phases of the problem. Discussion periods are arranged to supplement lectures and to give the administrator a balanced view of the cancer field in clinical, research, and service aspects.

Public Health Practice 5a. Control of Tuberculosis

Lectures and field exercises. *Tuesdays and Thursdays, 2-4, first period.* Dr. POPE.

Credit 2 units.

The bacteriology, pathology and epidemiology of tuberculosis are reviewed. Control measures applicable to public health practice are discussed. The approach is that of the administrator rather than that of the clinician, although specialists in various aspects of tuberculosis will lead some of the discussions. Field trips include visits to sanatoria, mass chest x-ray projects and tuberculosis clinics.

Public Health Practice 6d. Venereal Disease Control

Lectures, demonstrations, and discussions. *Mondays, Tuesdays and Thursdays, 9-11, fourth period.* Dr. CLARKE.

Credit 3 units.

This course presents, first, the basic medical data regarding syphilis, gonorrhea, chancroid, granuloma inguinale, lymphogranuloma venereum, yaws and other syphiloid diseases, as communicable diseases, and second, their epidemiology, prevention, and administrative control. During the first part of the course the subject matter is presented by means of lectures, motion pictures, slides, and clinical demonstrations. The second part is devoted to lectures and class discussions of practical problems involved in the public health control of venereal diseases.

Clinics

Clinical instruction in syphilis at the Peter Bent Brigham Hospital. *Wednesdays, 6-8 p.m., and Thursdays, 1-3 p.m.* Dr. MARLOW.

Credit units according to amount of work done.

These clinics are available during the entire year to all public health students; those who are planning to do specialized public health work in this field are expected to spend considerable time in them and to participate in the work.

Clinical instruction in gonorrhea at the Peter Bent Brigham Hospital. *Mondays through Saturdays, 8:30-11:30 a.m.*

Credit units according to amount of work done.

These clinics, while especially designed for students whose major interest is the control of the venereal diseases, are also available to other students.

Field study—Public Health Practice 34d.

Public Health Practice 7c, d. Dental Public Health Practice

Conferences, seminars, and field study. Time and credit to be arranged.

Dr. DUNNING and associates.

Emphasis is laid on the application of such sciences as epidemiology and biostatistics to dental problems and upon public health administration in the dental field.

Opportunities for clinical experience are available at the Harvard School of Dental Medicine under certain circumstances.

Public Health Practice 8c, d. Veterinary Public Health Practice

Seminars. Time and credit to be arranged. Dr. ———.

Discussion of advanced problems of veterinary public health practice, with particular reference to integration in the program of official and voluntary health agencies.

Public Health Practice 10c, d. Public Health Administration, Health Education, Public Health Nursing and Social Work in Health Agencies

Seminars and field study. *Mondays, Wednesdays and Fridays, 2-4, third and fourth periods.* Drs. LEAVELL, GETTING, FRECHETTE and MAYES, and Misses ROBERTS, VARLEY and RICE.

Credit 6 units.

Administration:

The practical application of public health principles is developed through case studies, surveys and field study in nearby communities. General administrative problems are discussed, as well as those in the fields of health education,

public health nursing and social work. Students are assigned problems or situations to study and report upon for class discussion. The importance of teamwork in public health is stressed.

Health Education:

Community-wide and special health education programs are presented; procedures and media studied and the important role of each team member in health education emphasized.

Public Health Nursing:

Public health nursing in both official and voluntary agencies is emphasized with special attention to administrative needs and in relationship to the total community health program.

Social Work in Health Agencies:

The development of the social concept is reviewed, and orientation in the principles and methods of social workers in health and welfare agencies is discussed.

Public Health Practice 30c, d must be taken in connection with this course to provide opportunities for field study.

Prerequisite: Public Health Practice 1b.

Public Health Practice 11c, d. Administration of Medical-Care Programs

Seminars, field observations, and exercises. *Mondays and Wednesdays, 11-1, third and fourth periods.* Dr. GOLDMANN.

Credit 4 units.

An advanced seminar enlarging on the basic subject matter presented in Public Health Practice 2b, Organization of Medical Care. Discussion of the basic principles and problems of sound administrative organization of medical-care programs. Study of the administrative practices actually followed by public agencies in charge of tax-supported services and by voluntary agencies administering prepayment plans for hospital care, physicians' service, or both. Discussion of the techniques of surveying and appraising medical-care needs and medical-care programs. Analysis of the experience gained in the operation of various types of tax-supported and insurance plans. Visits to selected medical-care facilities and to administrative agencies, public and voluntary. Supervised studies of typical organizations.

Prerequisite: Public Health Practice 2b.

Public Health Practice 30c, d must be taken in connection with this course to provide opportunities for field study.

Public Health Practice 12c, d. Statistical Analysis (Administrative)

Lectures and seminars. *Tuesdays, 2-4, third and fourth periods.*

Staff of the Department and of other Departments.

Credit 2 units.

This is a joint course with the Departments of Biostatistics and Maternal and Child Health. See Biostatistics 4c, d for description.

Public Health Practice 13d. Hospital Organization and Community Relationships

Lectures and field exercises. *Tuesdays and Saturdays, 11-1, fourth period.*

Field trips to be arranged. Dr. WILHELM.

Credit 2 units.

This course is designed to give the health officer basic information on the organization and functions of the typical hospital and, especially, on its relationship to the various agencies engaged in health activities and to the community as a whole. No attempt is made to develop hospital administrators. The course deals with the responsibilities of a hospital administrator towards a health official who may have general charge of hospitals incorporated in his department. Therefore, emphasis is on fundamental problems, rather than on the details of hospital administration.

This course will not be given for less than ten students.

Prerequisite: Public Health Practice 2b.

Public Health Practice 14c, d. Mental Health Problems

Seminars. *Fridays, 11-1, third and fourth periods.* Dr. LINDEMANN.

Credit 2 units.

A series of discussions dealing with factors in individual development, family context, and social structure of the community which are relevant to emotional disturbances. Mental health problems, such as control of delinquency, mental disease, psychoneurosis, and psychosomatic disorders are reviewed, both from the point of view of the clinic and of community resources. An effort then is made to outline a program for community mental health, including the problems involved in the efforts of public agencies and voluntary groups.

Prerequisite: Public Health Practice 3b.

Public Health Practice 15c, d. Cancer Control Administration

Seminars and field study. Time and credit to be arranged. Dr. SNEGIREFF.

Discussion of advanced problems in administration of cancer control programs of official and voluntary health agencies at national, state, county, and community levels, and of statistical problems related to cancer etiology and cancer control.

Observation and field study in cancer diagnostic, combined diagnostic, and therapeutic clinics, cancer detection clinics, cancer hospitals, related activities, and facilities. This course is designed primarily for cancer control officers.

Prerequisite: Public Health Practice 4a.

Public Health Practice 16d. Control of Communicable Disease

Seminars. *Wednesdays, 9-11, fourth period.* Dr. MAYES.

Credit 1 unit.

Epidemiologic study of a disease problem is basic to its control; therefore Epidemiology 5c is a prerequisite to this course. Specific problems and situations discussed in Epidemiology 5c are studied from the administrative standpoint in this course. Attention is centered on elements of control programs desirable with personnel and facilities available in the given situations under study.

Prerequisite: Epidemiology 5c.

Public Health Practice 17d. Administration of Tropical Public Health Programs

Conferences and seminars. *Wednesdays, 11-1, fourth period.* Dr. AUGUSTINE, Miss THOMAS and the staff of the Department of Public Health Practice.

Credit 1 unit.

This is a joint course with the Department of Tropical Public Health. See Tropical Public Health 2d for description.

Public Health Practice 20. Special Assignments for Individual Work

Advanced students are offered the opportunity to undertake special studies in the practice of organized health services. The student must have completed Biostatistics 1a, b and Public Health Practice 1b before registering for this work.

FIELD STUDY IN PUBLIC HEALTH PRACTICE

Public Health Practice 30c, d. Field Study in Administration

Field trips. *Thursdays, 2-5, third and fourth periods.*

Credit 1.5 units.

Students taking Public Health Practice 10c, d or 11c, d (or both) are required to schedule this course also so that they may be able to take the field trips in general administration, medical care administration, health education, public health education and social work.

Public Health Practice 31c and 31d

Field study in local, district, and state health departments. *Jan. 28-Feb. 2, March 31-April 5, and June 3-18.*

Credit to be arranged.

Opportunity to spend a continuous period in a well operated health department observing activities of the various subdivisions, work of the health officer, and relationships with the community, with discussions and reports. Only a few students can be accommodated in any one department at a given time. Specific arrangements for this course must be made well in advance of the dates scheduled.

Public Health Practice 32c and 32d

Field Study—Medical-Care Agencies. *Jan. 28-Feb. 2, March 31-April 5, and June 3-18.*

Credit to be arranged.

Assignments for continuous periods to voluntary and official institutions and administrative agencies concerned with provision of medical care. Evaluation of observations. Offered in conjunction with Public Health Practice 11c, d.

Public Health Practice 33d. Conferences in Hospital Administration

Fourth period. Time and credit to be arranged. Dr. WILHELM.

This course is designed for students who elect Public Health Practice 14d and for certain others who are interested in attending daily administrative conferences at the Peter Bent Brigham Hospital. Limited to five students.

Public Health Practice 34d

Field study in the City of New York Department of Health or other city or state health department. Some choice is permitted as to time and place. Under general supervision of Dr. Clarke.

DEPARTMENT OF SANITARY ENGINEERING

GORDON M. FAIR, S.B., S.M., *Abbot and James Lawrence Professor of Engineering, Gordon McKay Professor of Sanitary Engineering, and Head of the Department*

EDWARD W. MOORE, A.B., A.M., *Associate Professor of Sanitary Chemistry*

HAROLD A. THOMAS, JR., S.B., S.M., S.D., *Associate Professor of Sanitary Engineering*

SHIH L. CHANG, M.D., DR.P.H., *Associate Professor of Sanitary Biology*

J. CARRELL MORRIS, S.B., A.M., PH.D., *Associate Professor of Sanitary Chemistry*

Sanitary Engineering 1a, b. Principles of Sanitation

Lectures and demonstrations. *Tuesdays, Thursdays, 10-11, and Saturdays, 10-12, first and second periods.* Professors FAIR, DRINKER and YAGLOU, Associate Professors MOORE and SILVERMAN, Dr. CHANG.

Credit 4 units.

This course is entitled Principles of Sanitation, and endeavors to live up to the name by emphasizing the broad engineering principles useful in environmental control. An attempt is made to present these principles in a manner comprehensible to students who have no engineering background. Technics of control are discussed, but are presented as illustrations of principle, not as rule-of-thumb procedure which the student is expected to learn by rote. A few field visits are made to show the application of principles in practice.

The ultimate objective of the course is not the conversion of the student into a sanitation expert, ready to design a water plant, eliminate rats, or prescribe a ventilation system, but rather to prepare him to supervise, to cooperate with, and to understand the people who are to do the job. It also acquaints him with the nature and extent of the problem, with what can be and has been accomplished by sanitation, and with what may be expected to be accomplished in the future.

The topics considered include: water supply and purification; sewerage and sewage treatment; refuse collection and disposal; food, milk and shellfish sanitation; arthropod and rodent control; ventilation and air conditioning; noise control; illumination.

Sanitary Engineering 2a, b. Sanitary Bacteriology

Lectures and laboratory. *Tuesdays, Thursdays and Saturdays, 8-9 and Wednesday or Friday, 1-5, first and second periods.* Dr. CHANG.

Credit 5 units.

Morphology, physiology, and cultivation of bacteria. Quantitative bacteriol-

ogy. Effect of physical and chemical agents on bacteria. Mechanisms of antibacterial activity. Differentiation of Enterobacteriaceae Immunity. Bacteriology and sanitary control of air, water, and swimming pools. Soil and sewage microbiology. Viruses.

This is the same course as Engineering 274a.

Sanitary Engineering 3c, d. Sanitary Bacteriology and Parasitology

Lectures and laboratory. *Mondays, Wednesdays and Fridays, 12-1, and Tuesdays, 9-1, third and fourth periods.* Dr. CHANG.

Credit 5 units.

Bacteriology and sanitary control of milk and milk products, foods and eating establishments, and shellfish. Parasitology and control of diseases caused by zoological parasites. Arthropods of medical importance and their control. Rodents and rodent control.

This is the same course as Engineering 274b.

The following courses of instruction offered in the Department of Engineering of the Graduate School of Arts and Sciences are open to properly qualified students:

Engineering 270a. Hydrology and Hydraulics of Water Supply and Waste Disposal. Professor FAIR.

Engineering 270b. Engineering Principles of Water and Sewage Treatment. Professor FAIR.

Engineering 271b. Chemistry of Water and Sewage Treatment. Associate Professor MOORE.

Engineering 272a. Sanitary Chemistry: Analytical. Associate Professor MORRIS.

Engineering 272b. Sanitary Chemistry: Physical and Nuclear. Associate Professor MORRIS.

Engineering 275a. Industrial Water Supply and Waste Disposal. Associate Professor MOORE.

Engineering 275b. Limnology and Stream Sanitation. Associate Professors MOORE and THOMAS.

Engineering 276a. Organic and Biological Chemistry as Applied to Water and Sewage. Associate Professor MORRIS.

Engineering 276b. Instrumental Techniques in Water and Sewage Analysis. Associate Professor MORRIS.

DEPARTMENT OF TROPICAL PUBLIC HEALTH

JAMES S. SIMMONS, S.B., M.D., PH.D., DR.P.H., S.D. (hon.), *Professor of Public Health and Acting Head of the Department*

GEORGE C. SHATTUCK, A.B., M.D., A.M. (hon.), *Clinical Professor of Tropical Medicine, Emeritus*

DONALD L. AUGUSTINE, S.B., SC.D., SC.D. (hon.), A.M. (hon.), *Professor of Tropical Public Health and Executive Head of the Department*

QUENTIN M. GEIMAN, S.B., S.M., PH.D., *Associate Professor of Tropical Public Health*

THOMAS H. WELLER, A.B., S.M., M.D., *Associate Professor of Tropical Public Health*

JUSTIN M. ANDREWS, PH.B., SC.D., *Visiting Lecturer on Tropical Public Health*

PAUL F. RUSSELL, A.B., M.D., M.P.H., *Visiting Lecturer on Tropical Public Health*

EDWARD I. SALISBURY, M.D., *Visiting Lecturer on Tropical Public Health*

FRED L. SOPER, A.B., S.M., M.D., DR.P.H., *Visiting Lecturer on Tropical Public Health*

GEORGE M. SAUNDERS, A.B., M.D., *Visiting Lecturer on Tropical Public Health*

LEWIS W. HACKETT, A.B., M.D., DR.P.H., *Visiting Lecturer on Tropical Public Health*

LOUIS L. WILLIAMS, JR., M.D., *Visiting Lecturer on Tropical Public Health*

ALBERT A. HORNER, A.B., M.D., *Instructor in Tropical Public Health*

RUTH A. THOMAS, A.B., A.M., M.P.H., *Instructor in Tropical Public Health*

ELI CHERNIN, S.B., A.M., SC.D., *Research Associate in Tropical Public Health*

DORIS Y. M. HSU, B.A., A.M., PH.D., *Special Research Fellow in Tropical Public Health*

JOHN H. HANKS, S.B., PH.D., *Lecturer on Bacteriology and Immunology*

Tropical Public Health 1c, d. Conservation of Health in Tropical Countries

Lectures, laboratory exercises, and demonstrations. *Tuesdays and Thursdays, 2-5, third and fourth periods.* Dr. AUGUSTINE and associates.

Credit 4 units.

This course deals with the important health hazards of the tropical regions of the earth. It is concerned with all the numerous factors which combine to exert a deleterious effect on human welfare and efficiency in tropical countries. These include climate, environment, food supply, density of population, social and economic conditions, and the more serious diseases of the

tropics. The clinical aspects of tropical medicine are not neglected, but the main emphasis will be placed on the recognition of diseases and their prevention or control. Special consideration is given to recent advances in our knowledge of the insect-borne diseases, including their distribution and incidence, host-parasite relations, the diagnostic procedures available for their identification, and the best methods available with which to protect both the individual and the community against their attack.

The content of this course is contingent upon an adequate background in the pre-clinical medical sciences, especially histology and pathology. Students who lack training in these disciplines will be admitted only subject to the approval of the head of the department.

Tropical Public Health 2d. Administration of Tropical Public Health Programs

Lectures and conferences. *Wednesdays, 11-1, fourth period.* Dr. AUGUSTINE, Miss THOMAS, Dr. LEAVELL.

Credit 1 unit.

This course is given jointly with the Department of Public Health Practice (see Public Health Practice 17d). It is designed to acquaint the student with administration of public health programs in tropical countries. Formal presentation of subjects dealing with actual health conditions and problems of international importance in representative tropical regions will be made by visiting lecturers. These will be followed by informal conferences in which the students will be expected to participate. Careful consideration will be given to the possibility of developing more effective tropical health programs through application of administrative techniques adapted to the needs of different peoples and climates. Registration is open to all students but admission for credit is subject to the approval of the head of the Department.

Tropical Public Health 3d. Arthropods in Relation to Human Disease

Lectures and laboratory exercises. *Fridays, 9-11; Wednesdays and Fridays, 2-5, fourth period.* Dr. FULLER.

Credit 3 units.

This is a joint course with the Department of Microbiology. See Microbiology 14d for description.

Tropical Public Health 4d. International Aspects of Tropical Public Health

Conferences. *Mondays, 11-1, fourth period.* Dean SIMMONS.

Credit 1 unit.

These conferences are available to a small group of selected students interested in the broader aspects of tropical public health, with special refer-

ence to specific problems that have an important bearing on international health. Conferences are informal and the students are expected to take an active part in all of the discussions, which are limited to international problems of current interest. Admission is by permission of the instructor.

Tropical Public Health 5c, d. Seminar in Tropical Public Health

Seminars and discussions. *One hour session twice a month throughout the third and fourth periods. Time to be arranged.* Staff of the Department.

Credit .5 unit.

Students particularly interested in Tropical Public Health will meet with the staff members for the presentation and discussion of current literature and original investigations. Admission subject to approval of the instructors.

Prerequisite: Tropical Public Health 1c, d or its equivalent.

Tropical Public Health 6b. Parasitology

Lectures, laboratory exercises, and demonstrations. *Tuesdays, Thursdays and Saturdays, 10-1, November 26-December 22.* Dr. AUGUSTINE, Dr. GEIMAN, Dr. WELLER, and associates.

Credit 1.5 units.

This course is designed primarily for students in the School of Medicine. It is open, however, to a limited number of students registered in the School of Public Health who wish to review the subject. The important helminth and protozoan parasites of man are considered with reference to their geographic distribution, identification, mode of transmission, pathogenesis, immune reactions, and methods for prevention and control. Clinical aspects and chemotherapy of parasitic diseases are discussed. Emphasis is given to methods of laboratory diagnosis. Arthropods of parasitologic importance are briefly surveyed with special consideration of insects related to human disease.

Tropical Public Health 20. Research

Opportunity is offered to qualified students to work on problems in tropical public health under the supervision of the staff. An extensive number of parasites of medical importance are maintained for studies on metabolism, nutrition, host-parasite relations, and chemotherapy. Arrangements may be made for students to work in laboratories of hospitals situated within the tropics or to cooperate in organized field investigations.

GENERAL INFORMATION

Registration

Registration in the School of Public Health for the academic year 1951-52 is from Monday, September 17 to Friday, September 21. A faculty advisor is assigned to each student to consult with him about his selection of courses and to advise him throughout the year. Adequate time during registration week should be allowed by the student for discussion of his program with his advisor and the Dean or Assistant Dean of the School, who must approve each schedule.

All students who are not citizens of the United States will be referred before registration to the Counselor for Foreign Students, 24 Quincy Street, Cambridge, where they will present a statement of admission, show their passports, and fill out a Student Registration form. They will then receive a card for presentation at registration, showing they have been cleared by the office of the Counselor for Foreign Students.

Veterans

Information about the procedure to be followed by students who are eligible for educational benefits under the G.I. Bill may be secured from the Secretary of the School or from the Counselor for Veterans, Government Aid Department, Lehman Hall, Cambridge.

Veterans who have been discharged from the armed services within a year must fill out a discharge questionnaire. Admission in the case of such a veteran is subject to the medical approval of the Department of Hygiene of the University before registration.

Housing

There are no dormitories for students of the School of Public Health but they may get their meals at Vanderbilt Hall dining room, the Medical School dormitory. Single students usually can find furnished rooms or apartments in the vicinity of the School, or in nearby residential sections such as Brookline. Houses or apartments for families are more difficult to obtain and therefore married

students who plan to bring their families are advised to arrive in Boston at least three weeks in advance of the opening of School, in order to have time to secure living quarters. The School is glad to be of assistance by supplying information about available places, but the responsibility for securing housing rests with the students.

Fees and Expenses

The fee for tuition for each academic year is \$770 for all full-time students. For part-time students the fee varies according to the courses taken and is based on the proportion of the annual fee for instruction which the credit units for each course bear to the total number of credits necessary for the degree of Master of Public Health, plus \$5.00 for each course. For example, a part-time student taking a course with a credit unit value of 2 would pay a tuition fee of \$43.50; a student taking a course with a credit unit value of 4 would pay \$82.00.

The fees required of candidates for the degrees of Master of Science in Hygiene, Doctor of Science in Hygiene, and Doctor of Public Health will be prorated according to the course credits (including research courses) taken in any year on the same basis as mentioned above for part-time students working for the degree of Master of Public Health, but the total amount of fees paid toward any degree must equal the minimum residence tuition requirement for the specific degree. The \$5.00 course-fees required of part-time students are not included as prorated credit fees. Students who have completed the course work and the residence requirement for any degree, or have paid a total of two years' full tuition toward the doctorate (at least one of which is subsequent to the completion of work equivalent to the requirements for the master's degree) and still have degree requirements to be fulfilled, shall pay, for a period which shall not ordinarily extend beyond two additional years, a tuition fee of half-rate per year for full-time work, and in proportion for less than full-time work. Residence is interpreted to mean that an individual is registered as a student and is using one or more of the facilities of the University. Residence may be completed on a part-time

basis in proportion to the amount of fees paid relative to the total fee required to fulfill the minimum residence requirement, but in no case shall the tuition fee be less than \$50 per half-year for students, either part-time or full-time, who are in residence. A fee of \$25 per half-year shall be charged for any student completing degree requirements away from Harvard University.

Each full-time student will be charged a medical and infirmary fee of \$30 per year. Part-time students working at the *rate of* substantially half-time or less and living at home may be excused by the Bursar from the payment of such fee at any time within two weeks after their registration, upon the recommendation of the Dean.

Bills for tuition and fees will be issued and payable as follows:

Issued Payable

At registration		{ $\frac{1}{4}$ of the tuition for the year $\frac{1}{2}$ medical and infirmary fee for the year
Nov. 20	Dec. 10	{ $\frac{1}{4}$ of the tuition for the year board through October 31 miscellaneous charges
Jan. 21	Feb. 8	{ $\frac{1}{4}$ of the tuition for the year $\frac{1}{2}$ medical and infirmary fee for the year board through December 31 miscellaneous charges
April 21	May 9	{ $\frac{1}{4}$ of the tuition for the year board through March 31 miscellaneous charges
June 11 *	June 11	{ board to the end of the year miscellaneous charges
June 30	July 15	{ board to the end of the year miscellaneous charges

Students who are candidates for degrees must have paid all dues to the University at least one day before the day upon which the degrees are to be voted. A student who leaves during the year is charged

* Applies only to candidates for degrees.

to the end of the tuition period in which he leaves provided before that time he gives the Dean notice in writing of his withdrawal; otherwise he is charged to the end of the tuition period in which such notice is given.

A student who leaves the University for any reason whatever must pay all charges against him immediately upon receipt of a bill from the Bursar. Every student will be held responsible for the payment of fees until he has notified the Dean of his intention to withdraw from the School.

All term bills will be sent to the student at his local address unless the Bursar is requested in writing to send them elsewhere.

Any student whose indebtedness to the University remains unpaid on the date fixed for payment is deprived of the privileges of the University until he is reinstated. Reinstatement is obtained only by consent of the Dean of the School in which the student is enrolled, after payment of all indebtedness, and a fine of \$10 for late payment.

Bond Requirement

Upon entrance to the School every student is required to file with the Bursar a bond in the sum of \$500 as security for payment of University bills. The bond must be signed by two bondsmen, both of whom must be citizens of the United States, or by a surety company duly qualified to do business in Massachusetts. No officer or student of the University will be accepted as a bondsman and in no case will more than one parent be accepted. In lieu of the bond a student may deposit with the Bursar \$500 in United States Treasury coupon-bearing bonds, or \$500 in cash, which will bear no interest. Blank forms of bonds may be obtained at the Dean's office or from the Bursar.

Student Health Service

Each full-time student is charged a Medical and Infirmary Fee of \$15 per term. This entitles the student to medical advice and treatment without charge at the Department of Hygiene Office in Vanderbilt Hall, 251 Longwood Avenue, Boston. A physician is at this

office from 8:20-9:00 a.m. and from 4:45 to 5:30 p.m. daily except Saturday afternoon, Sundays, and holidays. Between the hours of 9:00 a.m. and 5:00 p.m. on week-days a medical secretary-technician is at the office and will call the physician in case of an emergency. Part-time students working at the rate of substantially half-time or less and living at home may be excused from the payment of the medical fee at any time within two weeks after registration, upon the recommendation of the Dean.

The facilities of the Hygiene Department are designed to cover the ordinary medical, psychiatric, and minor surgical needs of the students. The fee also covers, when necessary, board and ordinary nursing care, for not more than two weeks in any one term, in Stillman Infirmary, Mount Auburn Street, Cambridge. If there is major illness or major surgery, not cared for in Stillman Infirmary, the fee will pay for a portion of the charges up to two weeks in one of the hospitals associated with the Harvard Medical School, to which the student will be referred. The fee does not include the costs of special nurses, private rooms, X-ray examinations, anesthetics, special materials or special laboratory investigations, or professional charges, if any.

Upon registration a leaflet is given to each student describing all the medical and other services that have been organized under the Student Health Service plan of Harvard University.

Any illness necessitating absence from classes should be reported to the Student Health Office by the student, or an attending physician.

Every new student paying the medical fee is required to undergo a complete medical examination. This is done by designated appointment, in the evening only, shortly after admission to the School.

Evidence of having been satisfactorily vaccinated is required for entrance to Harvard University and a form for certification for this purpose is sent to each student who is accepted for admission.

Fellowships and Scholarships

The School of Public Health has no fellowships or scholarships of its own. Most students at the School are financed through fellow-

ships granted them by governmental health authorities or by private foundations or other organizations interested in furthering education and training in various aspects of public health. The Dean's office is prepared to furnish qualified applicants with the names of organizations sponsoring fellowship programs, if it appears that an application may properly be made to one or more of them. Occasionally a department of the School may have research funds at its disposal permitting it to grant limited fellowships aimed at a particular phase of its research program.

STUDENTS, 1950-51

DEGREE CANDIDATES AND FULL-TIME SPECIAL STUDENTS

Abdel-Kader, Mohamed, M.B., B.CH.	Cairo, Egypt
Andreadis, Emmanuel A., M.D.	Vathy-Samos, Greece
Ascher, Sidney F., A.B., C.P.H.	Springfield, Massachusetts
Ashley, Alta, A.B., S.M., PH.D., M.D.	Wellesley Hills, Massachusetts
Awan, Asghari K., M.B., B.S.	Lahore, Punjab, West Pakistan
Ballam, Ruth D., S.B.	Boston, Massachusetts
Beaudoin, Rachel A., S.B., M.SC.	Montreal, Canada
Berger, Joseph H., D.V.M.	Mishawaka, Indiana
Bill, Audrey A., A.B., M.D., M.P.H., M.P.H.	Wayland, Massachusetts
Blute, Margaret H., A.B.	Newton, Massachusetts
Bommarito, Ciro L., S.B., S.M.	Medford, Massachusetts
Breed, Mary E., A.B.	Kansas City, Missouri
Bruce-Chwatt, Leonard J., M.D., D.T.M. & H.	Lagos, Nigeria
Brutus, Maurice, A.B., M.D.	Port-au-Prince, Haiti
Caffer, Valerio J., M.D.	Santa Fe, Argentina
Campagnoli, Mario A. G., M.D.	Buenos Aires, Argentina
Caraway, L. Dean, A.B.	Mount Vernon, Iowa
Carstens, Marie-Luise, M.D.	Bremen, Germany
Carter, Holland M., M.D.	Smoaks, South Carolina
Chadwick, Ward L., M.D.	Denver, Colorado
Chakravarti, Ganga P., M.B., B.S., D.P.H.	Lucknow, India
Chang, Robert S., S.B., M.D.	Swatow, China
Chittick, Rae M., S.B., A.M.	Calgary, Canada
Clark, Gerald R., A.B., M.D.	Laurel, Maryland
Clark, Norman F., A.B., A.M.	Willow Run, Michigan
Clavecilla, Wigberto P., A.A., M.D.	Manila, Philippines
Cobb, Sidney, S.B., M.D.	Groton, Massachusetts
Cohen, Louis, M.D.	Winthrop, Massachusetts
Cohen, Saul I., S.B., A.M.	Roxbury, Massachusetts
Conwell, Donald P., A.B., M.D.	Birmingham, Alabama
Daniels, Farrington, Jr., A.B., A.M., M.D.	Madison, Wisconsin
David, Wilfred D., S.B., M.D., M.P.H.	Washington, D. C.
Delgado, José, S.B., M.D.	Popayan, Colombia
Fagan, Raymond, A.B., D.V.M., M.P.H.	Watertown, Massachusetts
Ferris, Benjamin G., Jr., A.B., M.D.	Weston, Massachusetts
Fish, Ralph C., Jr., V.M.D.	Beverly, New Jersey
Fleming, Elizabeth P., A.B., M.D.	Beverly, Massachusetts
Foster, Augusta F., A.B., M.D.	Boston, Massachusetts

- Friedman, Sidney, S.B.
 Fuller, Henry S., S.B., M.D., D.T.M. & H.
 García, Lauro S., M.D.*
 Gentry, John T., A.B., S.B., M.D.
 Gerhardt, Paul R., A.B., M.D.
 Gorbach, Ilse J., A.B., M.D.
 Grandjean, Etienne P., M.D.
 Grant, Marjorie, S.B., A.M.
 Gray, Herman H., M.D.
 Guy, Elliott L., B.A., M.A., B.D.
 Hamlin, Robert H., A.B., S.B., M.B., M.D.
 Helweg-Larsen, Hans F., M.D.
 Hood, Robert I., A.B., M.D.
 Huenemann, Ruth L., S.B., S.M.
 Huhtinen, Anja S., MED.LIC.
 Hummer, Robert L., V.M.D.
 Jones, Jane G., A.B.
 José, Francisco R., A.A., M.D.
 Joseph, John B., A.B.
 Kundin, William D., S.B.
 Lavnikovich, Nicholas J., S.B.
 Law, Frank E., D.D.S.
 Leamy, Catherine M., S.B., S.M.
 Leograndis, Stephen C., M.D.
 Ley, Herbert L., Jr., M.D.
 Lindgren, Roy P., M.D.
 Liswood, Sidney, A.B., M.B.A.
 Makari, Jack G., B.A., M.D., D.T.M. & H.
 Marks, Veronica R., S.B.
 Maxwell, Henry, D.V.M.
 McDonald, John C., M.R.C.S., L.R.C.P., M.B.,
 B.S., M.D., D.P.H., D.I.H.
 Merwin, J. Aileen, S.B., S.M.
 Millar, Jack W., A.B., M.D.
 Mochtar, Raden, M.D.
 Moseley, Charles H., A.B., M.D., M.P.H.
 Murphy, C. Henry, A.B., M.D.
 Nelson, Elsa J., S.B.
 O'Rourke, Edward J., M.D., A.B.
 Paláu, Ricardo C., S.B., M.D.
 Newark, New Jersey
 Wayland, Massachusetts
 Manila, Philippines
 St. Louis, Missouri
 Albany, New York
 Youngstown, Ohio
 Zurich, Switzerland
 Groton, New York
 Pomona, California
 Brooklyn, New York
 Columbus, Ohio
 Copenhagen, Denmark
 Corning, New York
 Knoxville, Tennessee
 Merikarvia, Finland
 Manheim, Pennsylvania
 Belmont, Massachusetts
 Bulacan, Philippines
 Providence, Rhode Island
 Washington, D. C.
 Lunenburg, Massachusetts
 Newtonville, Massachusetts
 Gardner, Massachusetts
 Framingham, Massachusetts
 Ashland, Kentucky
 Fort Dodge, Iowa
 Brookline, Massachusetts
 Enfeh, Lebanon
 Corning, New York
 Richmondville, New York
 London, England
 Tallahassee, Florida
 Palo Alto, California
 Djakarta, Java
 Anderson, South Carolina
 Wichita, Kansas
 Newport, Rhode Island
 Cambridge, Massachusetts
 Avalos, Mexico

* Deceased, January 7, 1951.

- Palmer, Edward W., S.B., ED.M.
 Phaneuf, Madeleine Y., S.B.
 Phelps, Shirley J., A.B.
 Pinkerton, I. Madeleine, M.B., B.CH., D.P.H.
 Potash, Louis, A.B.
 Poti, S. Janardan, B.Sc., M.A.
 Powers, John J., A.B., M.D.
 Price, Walter C., M.D., A.B.
 Puleo, Joseph, Jr., S.B., D.V.M.
 Randall, J. E. Raymond, S.B.
 Reynolds, William E., S.B., M.D., M.P.H.
 Rosenau, Barbara J., A.B., M.S.P.H.
 Sanders, Ursula G., A.B., M.D.
 Scott, Benton V., S.B., M.D.
 Shull, Kenneth H., A.B.
 Skaliy, Peter, A.B.
 Snedegar, Emijejan, S.B.
 Spangler, Huston K., A.B., M.D.
 Suvarnakich, Kamdhorn, M.B., M.P.H.
 Szyfman, Lajbus, M.D.
 Taylor, Carl E., S.B., M.D., F.R.C.P.
 Treadwell, Margaret R. G., A.B.
 Trulson, Martha F., S.B., M.P.H.
 Vitale, Joseph J., S.B., S.M.
 Vogel, Lorraine, A.B.
 Watkin, Donald M., A.B., M.D.
 Wendorf, Verdun H., B.A.
 White, Philip L., S.B., S.M.
 White, Thomas G., S.B.
 Whitehead, F. Eugenia, S.B., S.M.
 Woodhill, Joan M., B.S.A., S.M.
 Wright, Jeanne E., A.B.
 Wright, Paul E., S.B., M.D.
 Norwood, Massachusetts
 Newton Centre, Massachusetts
 Roxbury, Massachusetts
 Bath, England
 Roxbury, Massachusetts
 Calcutta, India
 Albany, New York
 Pittsburgh, Pennsylvania
 Buffalo, New York
 Sekondi, Gold Coast
 Burnett, Wisconsin
 Beverly, Massachusetts
 Concord, New Hampshire
 Houghton, Michigan
 Bloomington, Indiana
 Pawtucket, Rhode Island
 Upper Marlboro, Maryland
 Rochdale, Massachusetts
 Bangkok, Thailand
 Paris, France
 Shirleysburg, Pennsylvania
 New York, New York,
 Stoughton, Wisconsin
 East Boston, Massachusetts
 East Orange, New Jersey
 New York, New York,
 Toronto, Canada
 State College, Pennsylvania
 Springfield, Missouri
 Athens, Georgia
 Sydney, Australia
 Rochester, New York
 Knoxville, Tennessee

PART-TIME STUDENTS

- Bernstein, Nan, S.B.
 Boulware, Doris K., S.B.
 Caramello, Anthony V., S.B., M.S.P.H.
 Cooke, P. Asenath, S.B.
 Devitt, Margaret M., A.B., ED.M.
 Farrisey, Ruth M., S.B.
 Columbus, Nebraska
 Newberry, South Carolina
 Plymouth, Massachusetts
 Huntersville, North Carolina
 Quincy, Massachusetts
 Chestnut Hill, Massachusetts

Fillios, Louis C., A.B.	Cambridge, Massachusetts
Fitzgerald, Katherine E., S.B.	Dorchester, Massachusetts
Haehnel, Margaret M., A.B., S.M.	Wrentham, Massachusetts
Healey, Isabel, A.B., S.M.	Winchester, Massachusetts
Herlihy, John E., D.M.D.	Winchester, Massachusetts
Hyatt, Rheta, A.B.	Cambridge, Massachusetts
Kammeier, Clarence W., S.B.	Needham, Massachusetts
Keenan, M. Louise, A.B., ED.M.	Everett, Massachusetts
Kozeff, Mary K., S.B.	Southbury, Connecticut
Law, Alexandre G., S.B., M.D.	Andover, Massachusetts
MacIsaacs, Rosemary M., S.B.	Cohasset, Massachusetts
Martenson, Eugenie D., S.B.	Jamaica Plain, Massachusetts
Reynolds, Olive J.	Wickford, Rhode Island
Turner, Alice F., S.B.	Roslindale, Massachusetts
Walsh, E. Cecilia, S.B.	Tiverton, Rhode Island
Woodcock, Dorothy L., S.B.	Ripley, Maine
Yee, George S., S.B., S.M.	Allston, Massachusetts

DEGREES

On March 12, 1951, the following degrees were conferred:

MASTER OF PUBLIC HEALTH

- Sidney Frederick Ascher, A.B. (*Yale Univ.*) 1937, C.P.H. (*Univ. of North Carolina*) 1940
 Marjorie Grant, S.B. (*Cornell Univ.*) 1927, A.M. (*Columbia Univ.*) 1941

On June 21, 1951, the following degrees were conferred:

DOCTOR OF PUBLIC HEALTH

- Kamdhorn Suvarnakich, M.B. (*Siriraj Medical School*) 1930, M.P.H. (*Harvard Univ.*) 1950
 Thesis: The Measurement of Riboflavin Deficiency
 Special Field: Nutrition

DOCTOR OF SCIENCE IN HYGIENE

- Martha Fredericka Trulson, S.B. (*Univ. of Wisconsin*) 1930, M.P.H. (*Harvard Univ.*) 1947
 Thesis: Assessment of Methods for Dietary Intakes
 Special Field: Nutrition

- Joseph John Vitale, s.b. (*Northeastern Univ.*) 1947, s.m. (*New York Univ.*) 1949
 Thesis: Studies on the Normal Regulation of Caloric Intake
 Special Field: Nutrition
- Philip Louis White, s.b. (*Pennsylvania State Coll.*) 1942, s.m. (*Iowa State Coll.*) 1949
 Thesis: The Toxic Interaction of Copper and Choline
 Special Field: Nutrition
- Floy Eugenia Whitehead, s.b. (*Univ. of Georgia*) 1936, s.m. (*ibid.*) 1942
 Thesis: Studies in Nutrition Education, Ascension Parish, Louisiana 1944-1948 and 1950-1951
 Special Field: Nutrition
- Joan Mary Woodhill, b.s.a. (*Univ. of Sydney, Australia*) 1934, s.m. (*Univ. of Minnesota*) 1947
 Thesis: The Influence of Maternal Diet Upon the Course and Outcome of Pregnancy in a Group of Australian Women
 Special Field: Nutrition

MASTER OF PUBLIC HEALTH, *Magna cum laude*

- Henry Shepard Fuller, s.b. (*Worcester Polytechnic Institute*) 1937, m.d. (*Harvard Univ.*) 1941, d.t.m. & h. (*London School of Hygiene and Tropical Medicine*) 1947
- Herbert Leonard Ley, Jr., m.d. (*Harvard Univ.*) 1946
- Carl Ernest Taylor, s.b. (*Muskingum Coll.*) 1937, m.d. (*Harvard Univ.*) 1941, f.r.c.p. (*Canada*) 1946

MASTER OF PUBLIC HEALTH, *cum laude*

- Rae McIntyre Chittick, s.b. (*Columbia Univ.*) 1931, a.m. (*Stanford Univ.*) 1942
- Herman Hugo Gray, m.d. (*Tulane Univ.*) 1947
- Edward James O'Rourke, m.d. (*Harvard Univ.*) 1946, a.b. (*ibid.*) 1950
- Emijean Snedegar, s.b. (*Univ. of Kentucky*) 1942

MASTER OF PUBLIC HEALTH

- Mohamed Abdel Kader, m.b., b.ch. (*Fouad I Univ.*) 1936
- Alta Ashley, a.b. (*Mount Holyoke Coll.*) 1927, s.m. (*Univ. of Cincinnati*) 1930, ph.d. (*ibid.*) 1932, m.d. (*Vanderbilt Univ.*) 1937
- Asghari Khanum Awan, m.b., b.s. (*King Edward Medical Coll., Lahore*) 1943
- Ruth Diederricke Ballam, s.b. (*Columbia Univ.*) 1943
- Joseph Herman Berger, d.v.m. (*Ohio State Univ.*) 1939

- Leonard Jan Bruce-Chwatt, M.D. (*Univ. of Warsaw*) 1930, D.T.M. & H. (*London*) 1942
- Valerio José Caffer, M.D. (*National Univ., Córdoba*) 1942
- Mario A. G. Campagnoli, M.D. (*Faculty of Medicine, Buenos Aires*) 1940
- Marie-Luise Carstens, M.D. (*Univ. of Göttingen*) 1944
- Holland McTyeire Carter, M.D. (*Medical Coll. of South Carolina*) 1947
- Ward Lakie Chadwick, M.D. (*Univ. of Michigan*) 1926
- Ganga Prasad Chakravarti, M.B., B.S. (*Lucknow Univ.*) 1940, D.P.H. (*Calcutta Univ.*) 1942
- Gerald Robert Clark, A.B. (*Univ. of Oregon*) 1943, M.D. (*ibid.*) 1945
- Wigberto P. Clavecilla, A.A. (*Univ. of the Philippines*) 1935, M.D. (*ibid.*) 1940
- Sidney Cobb, S.B. (*Harvard Univ.*) 1938, M.D. (*ibid.*) 1942
- Louis Cohen, M.D. (*Tufts Coll. Medical School*) 1924
- Donald Pettus Conwell, A.B. (*Vanderbilt Univ.*) 1941, M.D. (*ibid.*) 1943
- Ralph Cooper Fish, Jr., V.M.D. (*Univ. of Pennsylvania*) 1939
- Augusta Flora Foster, A.B. (*Univ. of Maine*) 1943, M.D. (*Tufts Coll. Medical School*) 1947
- John Tilmon Gentry, A.B. (*Washington Univ.*) 1944, S.B., M.D. (*ibid.*) 1948
- Paul Robert Gerhardt, A.B. (*Univ. of Wisconsin*) 1935, M.D. (*ibid.*) 1937
- Ilse Jaenchen Gorbach, A.B. (*Flora Stone Mather Coll.*) 1943, M.D. (*Western Reserve Univ.*) 1945
- Hans Fredrik Helweg-Larsen, M.D. (*Univ. of Copenhagen*) 1942
- Robert Imrie Hood, A.B. (*Cornell Univ.*) 1930, M.D. (*ibid.*) 1933
- Anja Sofia Huhtinen, M.D. LIC. (*Univ. of Helsinki*) 1937
- Robert Leo Hummer, V.M.D. (*Univ. of Pennsylvania*) 1934
- Francisco R. José y Santos, A.A. (*Univ. of the Philippines*) 1938, M.D. (*ibid.*) 1944
- Catherine Mary Leamy, S.B. (*Simmons Coll.*) 1931, S.M. (*Univ. of Chicago*) 1935
- Roy Paul Lindgren, M.D. (*Univ. of Illinois*) 1945
- Veronica Ruppert Marks, S.B. (*Syracuse Univ.*) 1947
- Henry Maxwell, D.V.M. (*Cornell Univ.*) 1941
- Jack William Millar, A.B. (*Stanford Univ.*) 1945, M.D. (*George Washington Univ.*) 1947
- Raden Mochtar, M.D. (*Univ. of Indonesia*) 1924
- C. Henry Murphy, A.B. (*Boston Coll.*) 1935, M.D. (*Georgetown Univ.*) 1939
- Elsa Judith Nelson, S.B. (*Boston Univ.*) 1949
- Edward William Palmer, S.B. (*Massachusetts Institute of Technology*) 1933, ED.M. (*Boston Teachers Coll.*) 1934
- Madeleine Yvette Phaneuf, S.B. (*Simmons Coll.*) 1939
- John Judge Powers, A.B. (*Holy Cross Coll.*) 1931, M.D. (*Albany Medical Coll.*) 1935

Walter Coachman Price, M.D. (*Univ. of Pittsburgh*) 1947, A.B. (*ibid.*) 1950
 Joseph Puleo, Jr., S.B. (*Rutgers Univ.*) 1942, D.V.M. (*Cornell Univ.*) 1950
 Benton Van Dyke Scott, S.B. (*Northwestern Univ.*) 1916, M.D. (*ibid.*) 1918
 Huston Kiefer Spangler, A.B. (*Ursinus Coll.*) 1928, M.D. (*Univ. of Pennsylvania*) 1932

MASTER OF SCIENCE IN HYGIENE

(in the field of Biostatistics)

Sankaran Janardan Poti, B.Sc. (*Benares Hindu Univ.*) 1939, M.A. (*ibid.*) 1943

(in the field of Epidemiology)

John Corbett McDonald, M.R.C.S. (*England*) 1942, L.R.C.P. (*London*) 1942,
 M.B., B.S. (*ibid.*) 1947, M.D. (*ibid.*) 1949, D.P.H. (*ibid.*) 1949, D.I.H. (*England*) 1950

(in the field of Microbiology)

Louis Potash, A.B. (*Boston Univ.*) 1947

(in the field of Nutrition)

Rachel Agnes Beaudoin, S.B. (*Cornell Univ.*) 1941, M.Sc. (*Montreal Univ.*)
 1945

Saul Israel Cohen, S.B. (*Northeastern Univ.*) 1945, A.M. (*Boston Univ.*) 1946

(in the field of Public Health Education)

Norman Ford Clark, A.B. (*Univ. of Michigan*) 1943, A.M. (*ibid.*) 1950

Jane Gaudette Jones, A.B. (*Emmanuel Coll.*) 1946

Margaret Goodale Treadwell, A.B. (*Radcliffe Coll.*) 1950

SCHEDULE OF COURSES OFFERED
IN 1951-1952

FALL TERM — FIRST PERIOD (SEPTEMBER 24 TO NOVEMBER 17, 1951)

<i>Course</i>	<i>Credit Units</i>	<i>Course</i>	<i>Credit Units</i>
PUBLIC HEALTH		NUTRITION	
1a An Introduction to Public Health *	3	1a Public Health Nutrition	1.5
BIOSTATISTICS		6a Nutrition Seminar	.5
1a, b Principles of Biostatistics *	2 (4) †		
EPIDEMIOLOGY		PHYSIOLOGY	
15a, b Advanced Epidemiology	1-2 (2-4)	1a Human Physiology and Its Application to Public Health	2
INDUSTRIAL HYGIENE			
3a, b Industrial Medical Clinics	††	PUBLIC HEALTH PRACTICE	
MATERNAL AND CHILD HEALTH		4a Control of Cancer	2
1a Basic Problems	3	5a Control of Tuberculosis	2
MICROBIOLOGY			
1a, b Principles of Bacteriology and Immunology	1.5 (2)	SANITARY ENGINEERING	
12a, b Advanced Laboratory Work in Applied Immunology	††	1a, b Principles of Sanitation **	2 (4)
		2a, b Sanitary Bacteriology	2.5 (5)

* Required of all degree candidates

** Required of all M.P.H. candidates

† Figures in parentheses are units for entire course, if this runs longer than one period

†† Time and credit to be arranged

Fall Term -- First Period

September 24 to November 17, 1951

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

9	MICROBIOL. 1 a,b	MAT. & CHILD H. 1 a (BASIC PROBLEMS)	NUTRITION 1 a (PUBLIC HEALTH)	MICROBIOL. 1 a,b	MAT. & CHILD H. 1 a (BASIC PROBLEMS)	NUTRITION 1 a (PUBLIC HEALTH)	NUTRITION 1 a (PUBLIC HEALTH)
10			SANITARY ENGINEERING 1 a,b (**)			SANITARY ENGINEERING 1 a,b (**)	
11			PUBLIC HEALTH PRACTICE 4 a (CANCER CONTROL)			PUBLIC HEALTH 1 a (*) (INTRODUCTION)	SANITARY ENGINEERING 1 a,b (**)
12							
1							

2							
3	BIOSTATISTICS 1 a,b (*) (LECTURE AND LABORATORY)		PUBLIC HEALTH PRACTICE 5 a (TUBERCUL.)			PUBLIC HEALTH PRACTICE 5 a (TUBERCUL.)	BIOSTATISTICS 1 a,b (*) (LECTURE AND LABORATORY)
4			PHYSIOLOGY 1 a (HUMAN)			PHYSIOLOGY 1 a (HUMAN)	
5						NUTRITION 6 a (SEMINAR)	

(*) REQUIRED OF ALL
DEGREE CANDIDATES
(**) REQUIRED OF ALL
M.P.H. CANDIDATES

FALL TERM — SECOND PERIOD (NOVEMBER 19, 1951 TO JANUARY 26, 1952)

<i>Course</i>	<i>Credit Units</i>	<i>Course</i>	<i>Credit Units</i>
BIostatISTICS		NUTRITION	
1a, b Principles of Biostatistics *	2 (4) †	2b Biochemistry and Physiology of Nutrition	1.5
EPIDEMIOLOGY		3b The Laboratory Basis of Nutrition	1.5
1b Principles of Epidemiology *	2.5	6b Nutrition Seminar	.5
3b Clinical Infectious Diseases	.5		
15a, b Advanced Epidemiology	1-2 (2-4)		
INDUSTRIAL HYGIENE		PUBLIC HEALTH PRACTICE	
2b Industrial Air Analysis	2	1b Principles of Public Health Practice **	2
3a, b Industrial Medical Clinics	††	2b Organization of Medical Care	2
MATERNAL AND CHILD HEALTH		3b Psychosocial Problems	1
2b Problems and Services	2		
4b Social and Psychological Problems	2		
MICROBIOLOGY		SANITARY ENGINEERING	
1a, b Principles of Bacteriology and Immunology	.5 (2)	1a, b Principles of Sanitation **	2 (4)
11b Public Health Laboratory Procedures	3	2a, b Sanitary Bacteriology	2.5 (5)
12a, b Advanced Laboratory Work in Applied Immunology	††		

* Required of all degree candidates

** Required of all M.P.H. candidates

† Figures in parentheses are units for entire course, if this runs longer than one period

†† Time and credit to be arranged

Fall Term -- Second Period

November 19, 1951 to January 26, 1952

Monday

9	PUBLIC HEALTH PRACTICE 1 b (**)
10	EPIDEMIOLOGY 1 b (*)
11	EPIDEMIOLOGY (PRINCIPLES)
12	
1	

Tuesday

NUTRITION 2 b (BIOCHEMISTRY)
SANITARY ENGINEERING 1 a,b (**)
MATERNAL AND CHILD HEALTH 2 b (GENERAL)

Wednesday

PUBLIC HEALTH PRACTICE 1 b (**)
EPIDEMIOLOGY 1 b (*)

Thursday

NUTRITION 2 b (BIOCHEMISTRY)
SANITARY ENGINEERING 1 a,b (**)
MATERNAL AND CHILD HEALTH 2 b (GENERAL)

Friday

MICROB. 1 a,b
MICROB. 11 b
M.C.H. 4 b (SOC. & PSYCH.)
EPIDEMIOLOGY 1 b (*)

Saturday

NUTRITION 2 b (BIOCHEM.)
SANITARY ENGINEERING 1 a,b (**)
EPIDEMIOLOGY 3 b (CLINIC)

(*) REQUIRED OF ALL
DEGREE CANDIDATES
(**) REQUIRED OF ALL
M.P.H. CANDIDATES

2

BIOSTATISTICS 1 a,b (*) (LECTURE AND LABORATORY)

P.H.P. 2 b (MED. CARE)
MICROB. 11 b (LAB.)
INDUST. HYGIENE 2 b (AIR ANAL.)

MAT. & CH. H. 4 b (SOC. & PSYCH.)
P.H.P. 3 b (PSY.- SOC.)
EPIDEM'Y 15 a,b,c,d (SEMINAR)

P.H.P. 2 b (MED. CARE)
MICROB. 11 b (LAB.)
INDUST. HYGIENE 2 b (AIR ANAL.)

BIOSTATISTICS 1 a,b (*) (LECTURE AND LABORATORY)

5

SPRING TERM — THIRD PERIOD (FEBRUARY 4 TO MARCH 29, 1952)

<i>Course</i>	<i>Credit Units</i>	<i>Course</i>	<i>Credit Units</i>
PUBLIC HEALTH		MICROBIOLOGY	
3c History and Philosophy of Public Health	1	12c, d Advanced Laboratory Work in Applied Immunology	++
		13c Rickettsial Diseases	3
BIOSTATISTICS		NUTRITION	
2c, d Statistical Analysis (Epidemiological)	2 (3) †	2c Biochemistry and Physiology of Nutrition	1.5
3c, d Statistical Analysis (Laboratory)	2 (3)	3c The Laboratory Basis of Nutrition	1.5
4c, d Statistical Analysis (Administrative)	1 (2)	4c Dietary Evaluation	1
(with M.C.H. 5c, d and P.H.P. 12c, d)	1 (2)	7c Advanced Topics in Nutrition	.5
5c, d Seminar		8c Nutrition Ward Rounds	.5
EPIDEMIOLOGY		PUBLIC HEALTH PRACTICE	
2c Common Communicable Diseases	1.5	7c, d Dental Public Health Practice	++
3c Clinical Infectious Diseases	.5	8c, d Veterinary Public Health Practice	++
5c, d The Practice of Epidemiology	2 (4)	10c, d Public Health Administration, Health Education, Public Health Nursing and Social Work	3 (6)
15c, d Advanced Epidemiology	2-3 (4-6)	11c, d Administration of Medical-Care Programs	2 (4)
INDUSTRIAL HYGIENE		14c, d Mental Health Problems	1 (2)
1c Basic Problems	3	15c, d Cancer Control Administration	++
2c, d Industrial Air Analysis	2 (4)	30c, d Field Study in Administration	(1.5)
3c, d Industrial Medical Clinics	++	SANITARY ENGINEERING	
4c Personnel Administration	1.5	3c, d Sanitary Bacteriology and Parasitology	2.5 (5)
5c Human Problems of Adjustment in Industry	1	TROPICAL PUBLIC HEALTH	
6c Industrial Medicine	3	1c, d Conservation of Health in Tropical Countries	(.5)
MATERNAL AND CHILD HEALTH		5c, d Seminar in Tropical Public Health	2 (4)
3c, d Services, Programs and Administration	3 (6)		
8c Maternal and Child Nutrition	2		

† Figures in parentheses are units for entire course, if this runs longer than one period

†† Time and credit to be arranged

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

9	IND. HYG. 4 c (PERS.)	MAT. & CHILD H. 3 c,d (SPEC.)	NUTRITION 2 c (BIOCHEM.)	IND. HYG. 4 c (PERSON.)	MAT. & CH. H. 3 c,d (SPEC.)	NUTRIT. 3 c (LAB. BASIS)	NUTR. 2 c (BIOCH.)	EPIDEMIOLOGY 3 c (CLINIC)
10	BIOSTAT. 2 c,d (EPID.)	INDUST. HYGIENE 6 c (MED.)	MATERNAL & CHILD H. 8 c (NUTR.)	BIOSTAT. 2 c,d (EPID.)	INDUST. HYGIENE 6 c (MED.)			
11								
12		P.H.P. 11 c,d (MED'L CARE)	IND. HYG. 5 c (HUM. PROB.)		P.H.P. 11 c,d (MED'L CARE)			

1

(*) ALL DAY THURSDAY SET
ASIDE FOR SPECIAL
WORK AND FIELD TRIPS
IN MATERNAL AND CHILD
HEALTH

1:30

2				IND. HYGIENE 1 c (FIELD TRIPS)	MICRO- BIOL. 13 c (RICK. DIS.)			
3	P.H.P. 10 c,d (ADM.)	IND. EPID. 15 a b,c,d (SEM.) 1 c	BIOSTAT. 4 c,d (ADMIN.)	IND. HYGIENE 1 c (FIELD TRIPS)	MICRO- BIOL. 13 c (RICK. DIS.)			
4				TROP. P.H. 1 c,d (LEC. AND LAB.)				
5								

3:30

EPIDEMIOLOGY
2 c
(CLINIC)

5

SPRING TERM — FOURTH PERIOD (APRIL 7 TO MAY 31, 1952)

<i>Course</i>	<i>Credit Units</i>	<i>Course</i>	<i>Credit Units</i>
BIostatISTICS		PHYSIOLOGY	
2c, d Statistical Analysis (Epidemiological)	1 (3) †	2d Environmental Physiology	1
3c, d Statistical Analysis (Laboratory)	1 (3)	PUBLIC HEALTH PRACTICE	
4c, d Statistical Analysis (Administrative)	1 (2)	6d Venereal Disease Control	3
(with M.C.H. 5c, d and P.H.P. 12c, d)	1 (2)	7c, d Dental Public Health Practice	††
5c, d Seminar	1 (2)	8c, d Veterinary Public Health Practice	††
EPIDEMIOLOGY		10c, d Public Health Administration, Health Education, Public Health Nursing and Social Work	3 (6)
3d Clinical Infectious Diseases	.5	11c, d Administration of Medical-Care Programs	2 (4)
5c, d The Practice of Epidemiology	2 (4)	13d Hospital Organization and Community Relationships	2
6d Quantitative Method in Epidemiology	1	14c, d Mental Health Problems	1 (2)
7d Military Preventive Medicine	1	15c, d Cancer Control Administration	††
15c, d Advanced Epidemiology	2-3 (4-6)	16d Control of Communicable Disease	1
INDUSTRIAL HYGIENE		30c, d Field Study in Administration	(1.5)
2c, d Industrial Air Analysis	2 (4)	33d Conferences in Hospital Administration	††
3c, d Industrial Medical Clinics	††	SANITARY ENGINEERING	
8d Hygienic Aspects of Ventilation	1.5	3c, d Sanitary Bacteriology and Parasitology	2.5 (5)
MATERNAL AND CHILD HEALTH		TROPICAL PUBLIC HEALTH	
3c, d Services, Programs and Administration	3 (6)	1c, d Conservation of Health in Tropical Countries	2 (4)
MICROBIOLOGY		2d Administration of Tropical Public Health Programs	1
12c, d Advanced Laboratory Work in Applied Immunology	††	(with P.H.P. 17d)	
14d Arthropods in Relation to Human Disease (with T.P.H. 3d)	3	4d International Aspects of Tropical Public Health	1
NUTRITION		5c, d Seminar in Tropical Public Health	(5)
3d The Laboratory Basis of Nutrition	1.5		
5d Human Nutritional Disease	1.5		
7d Advanced Topics in Nutrition	.5		
8d Nutrition Ward Rounds	.5		

† Figures in parentheses are units for entire course, if this runs longer than one period

†† Time and credit to be arranged

Monday

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 6 d (VEN. DIS.)	
9	BIOSTAT. 2 c,d (LECT. & LAB.)		
10			
11			
12	NUTRIT. 5 d (NUT. DIS.)	P. H. P. 11 c,d (MED. CARE)	TROP. P. H. 8 d (IN- TER- NAT'L)

Tuesday

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

Wednesday

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

Thursday

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

Friday

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

Saturday

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

(*) ALL DAY THURSDAY
SET ASIDE FOR
SPECIAL WORK AND
FIELD TRIPS IN
MATERNAL AND CHILD
HEALTH

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

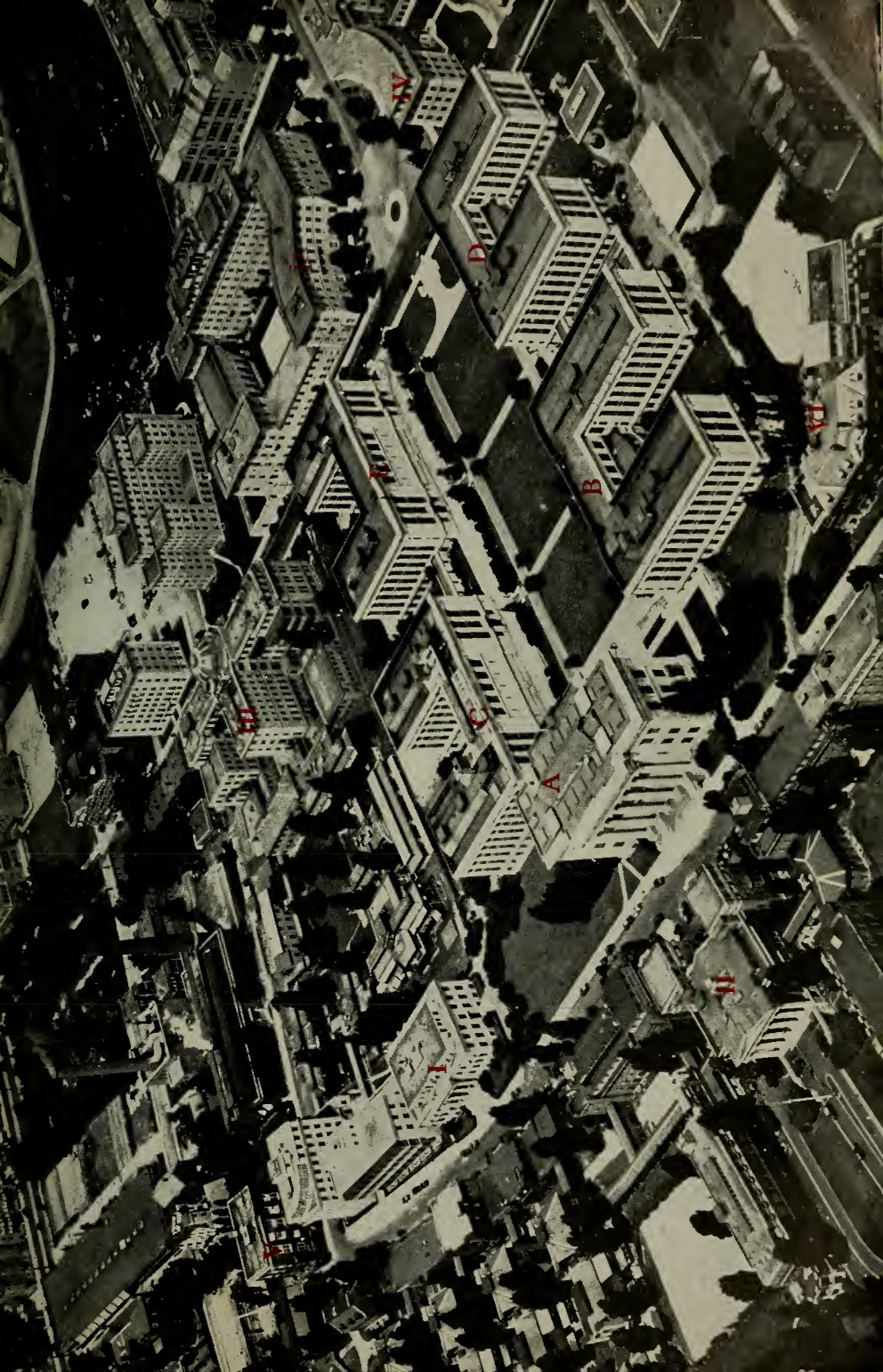
8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

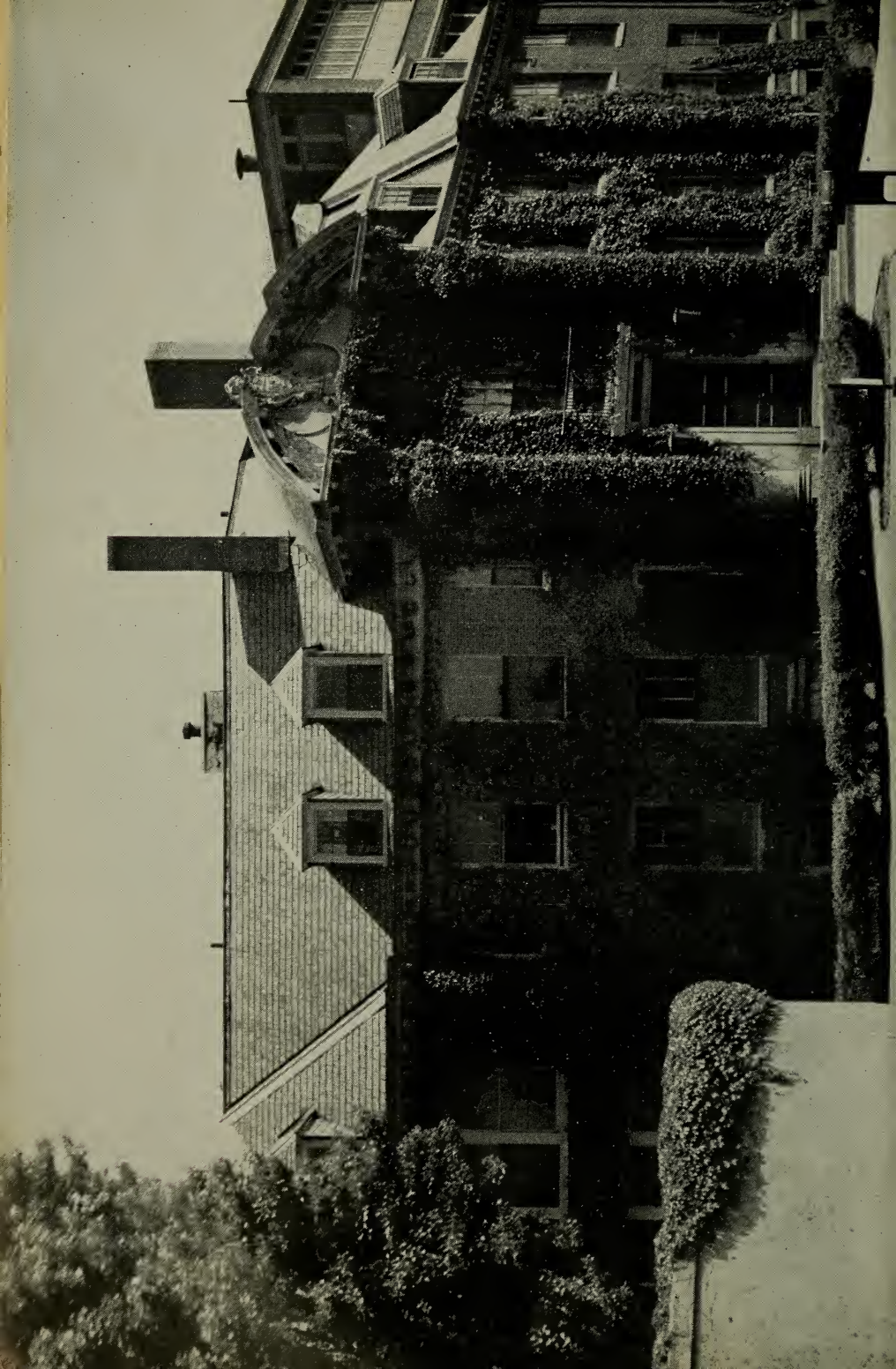
8	INDUSTRIAL HYGIENE 8 d (VENTILATION)		
	BIOSTAT. 3 c,d (LAB.) & LAB.	MAT. & CHILD H. 3 c,d (SPEC.)	P. H. P. 16 d (COM- MUN. DIS.)
9			
10			
11			
12			

KEY TO AERIAL VIEW

KEY TO AERIAL VIEW

- I School of Public Health, 55 Shattuck Street
 - Administration, Departments of Biostatistics, Industrial Hygiene, Maternal and Child Health, Physiology and Public Health Practice
- A Administration Building, Medical School
 - Second Floor, Library
- B, C, D, E Laboratories and Classrooms, Medical School
 - Building E2, Room 238, Department of Tropical Public Health
- F Vanderbilt Hall
 - Student Health Office, 251 Longwood Avenue
- II Peter Bent Brigham Hospital
- III and V Children's Hospital
- IV Lying-in Hospital
- VI School of Public Health, Huntington Building, 695 Huntington Avenue, Departments of Epidemiology, Nutrition and Microbiology





CALENDAR FOR THE ACADEMIC YEAR 1951-52

*September 17, Monday to
September 21, Friday*

Registration of students

FALL TERM, SEPTEMBER 24, 1951 TO FEBRUARY 2, 1952

September 24, Monday

First period begins

October 12, Friday

Columbus Day: a holiday

November 12, Monday

Armistice Day: a holiday

November 17, Saturday

First period ends

November 19, Monday

Second period begins

November 22, Thursday

Thanksgiving Day: a holiday

RECESS FROM SUNDAY, DECEMBER 23, 1951 TO SUNDAY, JANUARY 6, 1952, INCLUSIVE

January 26, Saturday

Second period classes end

January 28, Monday to

February 2, Saturday

Field work

SPRING TERM, FEBRUARY 4, 1952, TO JUNE 19, 1952

February 4, Monday

Third period begins

February 22, Friday

Washington's Birthday: a holiday

March 29, Saturday

Third period ends

RECESS FROM MARCH 30 TO APRIL 6, 1952, INCLUSIVE

March 31, Monday to

April 5, Saturday

Field work

April 7, Monday

Fourth period begins

April 19, Saturday

Patriot's Day: a holiday

May 30, Friday

Memorial Day: a holiday

May 31, Saturday

Fourth period classes end

June 2, Monday

Comprehensive examination

June 3, Tuesday to

June 18, Wednesday

Field work, research or reading period

June 19, Thursday

Commencement

